

PRELUDE TO ECONOMICS.

BY

WILLIAM AYLOTT ORTON

Professor of Economics in Smith College

LONDON

SIR ISAAC PITMAN & SONS, LTD.

PRINTED IN THE UNITED STATES OF AMERICA

For
Maurice and Basil
and their generation

PREFACE

With the increase of textbooks in both size and number, many a student finds himself failing to see the wood for the trees. He is accordingly offered, in what follows, a rapid flight over the terrain of economics, from which he may get at least a sense of direction and a general view of the scope, the data, the method, and the problems. That is perhaps as much as one volume can give nowadays; and I should advise the beginner to read straight through in the first instance, ignoring all notes and references, so that he may see how the various parts of the subject fit together and supplement one another. Then if he has appetite for more let him start again, using the book as a guide to further study and to the use of specialized texts.

The references have been carefully planned for this purpose. They parallel the text rather more closely than is usual, and an endeavor has been made to keep them reasonable in length. They are divided throughout in two groups: one for the beginner, the other for the more advanced worker or the teacher who may possibly welcome suggestions for intensive reading.

I cherish a faint hope that this book may reach a wider public than that of the school or college classroom; but the "general reader" is a wily bird to snare in this particular net. He can be inveigled without much difficulty into a mild interest in history, psychology, philosophy, and even relativity; but he gives economics a wide berth. I cannot say I altogether blame him. His governments spend most of their time, and a great deal of his money, in economic discussion and experiment; but that may be one of the reasons why he does not want to hear any more about it. Then his experience of economists has not always been fortunate. Either he finds them — with a few notable exceptions — sitting at the centre of a maze of "principles" that they call, humorously enough, the Long Run; or else they pounce upon him, when he is tired and jaded, from newspapers and broadcasting stations, with hortations couched in the spirit of "See what little Johnny's doing and tell him he must n't." Not unnaturally, little Johnny goes on doing it, even when he is more than half convinced that he really will get into trouble.

A main difficulty for the general reader has lain in the too persistent attempt to treat economics as a self-contained abstract science. For that attempt to succeed the data have to be simplified to a degree that deprives them of all likeness to anything under heaven; and the success is barren, because a human problem, unlike a mechanical one, cannot be taken to pieces and put together again without losing its essential reality

in the process. The divorce of economics from policy has been a profound error in which both economics and policy have suffered.

A further difficulty arises from the fact that the economist never finds his problems "pure." Both in origin and in development they are largely determined by other institutions through which also social will comes to action. But the time is past when he can simplify his world by the magic formula "Other things being equal," or evade its complexities by dwelling entirely in the Long Run. Wesley Mitchell once remarked that the problems of inductive economics hardly ever emerge in a form in which neo-classical theory is prepared to recognize them. But difficult as it is, and must always be, to build the bridge from theory to policy, the reward of the effort is an increase of traffic both ways.

To be even a plank in that bridge is perhaps more than this little book can claim; but it may plead one other justification for its efforts at realism. A fairly wide teaching experience has convinced me that it is easier for the beginner to begin with the concrete; and that further thought is more likely to be provoked by a definite statement, however inadequately supported, than by a complete but indeterminate array of qualifications and conflicting arguments. Further, every teacher worth his salt is convinced that some arguments are sound and others unsound, and he is actually a better teacher when saying so; better still if his students often disagree.

Economists who may find time to glance over yet another elementary book will recognize most of the traditional ingredients, though some of them are in unusual contexts. They will also recognize here and there a verbal wink when particularly thin ice is being crossed; and it is possible that some of the conclusions, crudely stated as they are, may invite discussion. What interest for them the book has will lie, however, mostly in its methodology.

I have endeavored to acknowledge all borrowings accurately, but for any that have been overlooked I apologize; and for innumerable ideas and suggestions gained from former teachers and colleagues, and herein paraphrased or mutilated, I am humbly grateful.

W. A. O.

CONTENTS

PART I

INTRODUCTORY

PREFACE	vii
I WHAT IT IS ALL ABOUT	3
§1. Introductory — §2. Wealth and Income — §3. Economics as Science — §4. Economics as Art — §5. The Problem of Policy	
II HOW IT ALL BEGAN	12
§1. From Status to Contract — §2. National Unity — §3. Mercantile Policy — §4. A Case — §5. The Beginnings of Revolt — §6. The Physiocrats — §7. <i>Laissez faire</i>	
III HOW IT GOT INTO DIFFICULTIES	25
§1. The Economic Revolution — §2. The Ele- ments of Capitalism — §3. First, Private Prop- erty: Its Nature and Evolution — §4. Second, Ownership Control: Early Theory and Mod- ern Practice — §5. Third, the Acquisitive Spirit: Its Association with Puritanism	

PART II

BUILDING THE NATIONAL HEAP

IV RICH AMERICA — AND HOW	43
§1. National Incomes Compared — §2. The Distribution of National Income — §3. The	

Problem of Inequality Income and Welfare —
 §4. The Sources of American Prosperity —
 §5. The Population Ratio: Power Resources —
 §6. Free Trade — §7. The Parable of the National Heap — §8. Scheme of Analysis

V BUILDING THE HEAP: COAL 55

§1. The Nature of the Extractive Industries —
 §2. The Tendency to Increasing Costs — §3. The Struggle of Skill versus Scarcity Coal as a Case — §4. Competition, Inertia, Over-equipment — §5. The Penalty of Planlessness — §6. England Muddles — But Not Through — §7. Is There a Way Out? — §8. The Problem of Wages — §9. The Problem of Capital — §10. *Laissez faire* at Bay

VI BUILDING THE HEAP: FOOD 74

§1. Too Many Mouths? — §2. Increasing Costs Again — §3. Was Malthus Wrong? — §4. Skill versus Scarcity: the International Solution — §5. And Its Limits — §6. The Neo-Malthusians — §7. The Present Crop Surpluses — §8. Weather versus Acreage — §9. Inertia: Psychological and Economic — §10. The Penalty of Planlessness

VII BUILDING THE HEAP: MANUFACTURE 93

§1. Skill Triumphant — §2. Specialization — §3. Evolution of the Tool — §4. Decreasing Costs: the Two Dynamic Factors — §5. Maximum Utilization — §6. Large-Scale Production — §7. Look at the Results — §8. And the Problems — §9. The Penalty of Planlessness — §10. The Shift to Distribution

VIII THE HIGHER STRATEGY OF POWER PRODUCTION 105

§1. The Problem of Security — §2. Control of Supply: Vertical Integration — §3. Horizontal

Integration — §4. Control of Demand: Advertising — §5. The Nemesis of Competition — §6. Concentration of Control — §7. Competition by Order of the Law — §8. The Transition from Negative to Positive Control

IX BUILDING THE HEAP: TRANSPORT 116

§1. Roads versus Railroads — §2. Fixed Costs — §3. Variable Costs — §4. Joint Costs — §5. Charging What the Traffic Will Bear — §6. "Long and Short Haul Clause" — §7. From Competition to Control — §8. Transportation Act of 1920 — §9. The Riddle of Reasonableness — §10. The Equalization of Earnings — §11. Controlled Consolidation — §12. Controlled Wages

X EXCURSION ROUND THE HEAP 132

PART III

PRICING DEPARTMENT

XI DEMAND 143

§1. Wants: Patent and Latent — §2. Measuring Wants — §3. Want Systems — §4. Demand and Demand Schedules — §5. Diminishing Marginal Utility — §6. The Rule of Balance — §7. Elasticity of Demand — §8. Price Levels and the Distribution of Goods

XII SUPPLY 156

§1. How Much of All Things? — §2. How Much of Each Thing? — §3. Planning a Simple Heap — §4. The Rule of Balance Again — §5. Supply and Supply Schedules — §6. Elasticity of Supply — §7. Summary

XIII	DEMAND AND SUPPLY	168
	§1. A Going Concern — Going Where? — §2. Competition and Constant Costs — §3. And Variable Costs: Three-Dimensional Exposition — §4. What Happens "at the Margin"? Three Cases — §5. Grain — §6. Newsprint — §7. Radio	
XIV	DIFFERENTIAL GAIN	183
	§1. Low-Cost and High-Cost Producers — §2. Does It Pay to Compete? — §3. Monopoly — §4. Modified Competition — §5. The Actual Range of Costs — §6. Theory versus Actuality: the Issue	
PART IV		
SHARING THE NATIONAL HEAP		
XV	OWNERSHIP INCOME: RENT	195
	§1. The Origins of Rent Theory — §2. How Rent Arises — §3. The Monopoly Element of Commercial Rent — §4. Alternative Uses: the Rule of Balance Again — §5. The Recapture of Rent: Henry George — §6. Difficulties and Objections — §7. Methods and Prospects	
XVI	OWNERSHIP INCOME: PROFIT	203
	§1. Differential Gain in Business — §2. Profit — §3. Is Profit Functional? — §4. Risk and Uncertainty Bearing — §5. Any Other Functions? — §6. Back to Differential Gain	
XVII	CONTRACTUAL INCOME: INTEREST	212
	§1. The Heap Pays for Its Upkeep — §2. What Is Capital? — §3. What Is Interest? — §4. Why Interest? — §5. How Interest? — §6. The Capitalistic Paradox — §7. The Investment System in Operation	

CONTENTS

xv

XVIII	WHERE THE TICKETS COME FROM	229
	§1. The Bankers and the Ticket Supply — §2. Ticket Material — §3. Written Tickets and the Banking Function — §4. The Volume of Deposits and the Price Level — §5. The Volume of Deposits and the Gold Reserve — §6. Why Gold?	
XIX	CONTRACTUAL INCOME: WAGES	242
	§1. The Wage Share and the Bargaining Basis — §2. Natural Law and Wage Theory — §3. Marginal Productivity Theory — §4. Its Uses and Deficiencies — §5. Does It Work? — §6. The Limits of the Wage Bargain: the Downward Limit — §7. Collective Bargaining — §8. Minimum-Wage Laws — §9. The Upward Limit	
XX	ENVOI	265
	NOTES AND REFERENCES	269

PART I
INTRODUCTORY

I

WHAT IT IS ALL ABOUT

§1. "Only fools and silly schoolmasters," says Robert Louis Stevenson, "push definitions over far into the domain of conduct; and the majority of women, not learned in these scholastic refinements, live all of a piece and unconsciously, as a tree grows, without caring to put a name upon their acts and motives." Whether that is to be accounted to them for righteousness the essayist does not decide; but it has at least the merit of expediency. For we all find it easier, and for most purposes more useful, to recognize in practice the nature of our activities than to define the categories in which philosophy would group them. Thus we should agree that the forces which determine the wages of a bricklayer, the fees of a doctor, the royalties of an author, the cost of travel, the price of a house, the periodicity of employment, and the prosperity of a nation are in the main economic; but the precise definition of the subject matter of economics is a task upon which we might (but shall not) expend much barren ingenuity. A sufficient short statement is the title of one of the best summary expositions — *The Science of Wealth* (J. A. Hobson); but as soon as we ask what is the nature of this "science,"

the basis of its laws and classifications, we open the door to a horde of intricate questions.

§2. Even the term *wealth* is not free from ambiguities. Its common usage is obviously inadequate: we must stretch it to include not merely money, nor merely tangible things like machines or crops, but intangible things like tradition or reputation affecting a business firm, which as "goodwill" are frequently made the subject of a money price. Such things as innate faculty or skill, which do not as a rule admit of a money valuation in themselves, being non-transferable (the sale of professional baseball or football players is possibly an exception), yet have a price upon their use. Again, some things which are wealth in one community are scarcely, or not at all, wealth in another; and some, like the coal deposits of China, that are hardly to be considered actual wealth may be justly termed potential wealth in view of the different status they might attain with a change in conditions. Scientific innovations, such as the utilization of rare earths or the discovery of new metal alloys, frequently bring into the category of wealth things which were not so reckoned before. Again, wealth to the individual is not necessarily wealth to society. Liens on property, like bonds or mortgages, so long as they lie within the collective system, do not figure in the collective calculation. And, conversely, certain assets of the society as a whole escape the total of individual reckonings.

For all these reasons, calculations of collective or

national wealth are rough-and-ready affairs, full of guesswork and never reliable for very long; and economists find the concept of income far more manageable. We can only guess the depth of the reservoir, but we can measure rather accurately the flow of the issuing stream. Some branches of the stream, it is true, escape us. "Psychic income" is not measurable — one cannot measure the satisfactions yielded by works of art, for instance. But, even here, the values we assign to such things are really deductions from the incomes we expect them to yield; and this is the general rule for putting values on income-yielding things. Where we cannot apply this method of reasoning backward from the income to the thing which yields it, we get into all sorts of difficulties — some of which will presently appear (Chapter IX).

§3. Then the claim of economics to the term *science* may very probably be challenged. We can have (it may be said) a science of inanimate objects, or even of the lower organisms, because they do not behave in senseless and unpredictable ways, or vary their conduct according to the sporadic impulses of a nature that we cannot sufficiently understand; but how can human conduct be made the basis of a science? Of course in economics, too, we are largely concerned with things; but it is not with things in themselves, only with things in relation to the human wants that give them value — a relation to which economics applies the technical term *utility*. "Economics," said Alfred Marshall (1842-1924), "is on the one side a study of wealth, and on the

other and more important side a part of the study of man." Is it not foolish to suppose that we can ever reduce this latter enterprise to the precision of a science?

In the large sense, it is; the mind can never hope to define the life that sustains both mind and so much more than mind. But the matter is more hopeful when we isolate a limited and simple set of stimuli, and confine ourselves to the evidence arising from our common nature — of which there is, after all, a good deal. Our results will not necessarily apply without modification to every individual; but they will give us a valid conception of the *normal*, from which we can reason. Accordingly, the word "normal" is in economics the adjective corresponding to the word "law"; and a "law" in economics is simply a summary statement of an observed tendency which we have reason to suppose will persist.

The wider the field of accurate observation, the better chance we have of enunciating valid laws. In this respect our advantage over the nineteenth century is very great. Earlier economists were compelled to do much of their reasoning *a priori*, assuming that the facts would bear them out, and acting (sometimes very mistakenly) on that assumption. During and since the European War the collection of exact data, especially by the United States and the League of Nations, has been so extended that inductive reasoning is possible over a far wider field. Indeed, more than half the difficulty for economics, considered as an art, — that is, as a means to an end, — lies

less in finding out the truth than in persuading people to accept it. The number of people who are prepared to accept the truth is never very large, and the proportion of politicians it includes is never very high.

§4. But if economics is to be considered as an art as well as a science, it is worth while pausing to consider just what end, or interest, it proposes to serve. "Human welfare" as an answer is obviously too broad, since the circumstances on which that depends are too various to be brought within the scope of any single discipline. More exactly, we may say the end is to promote "that part of social welfare that can be brought into relation with the measuring rod of money" (Pigou). This gives a limitation of just the sort that we must have for our science; since every science needs some method of measurement, and money — though a very imperfect yardstick — is the only universal one we have.

The important thing to remember is that neither economics nor any other art, in proposing a certain limited end or interest, makes any claim for the supremacy of that interest above all others. The evaluation of interests is the supreme problem of jurisprudence and philosophy. It is only by a few second-rate minds in a very brief and recent period of history that economic activities have been considered entirely self-justifying; economic purposes as final ends or absolutes for social theory; or the unrestricted dominance of economic or acquisitive impulses as either natural or necessary. On the contrary, the best ancient and modern thought is

unanimous in rejecting the idea of economic activity for its own sake, and in relegating economic interests to a subservient, though fundamental, rôle in the good life. Thus Aristotle, anticipating the Catholic Christian tradition: "As for the life of money-making, it is one of constraint, and wealth manifestly is not the good we are seeking, because it is for use, that is, for the sake of something further." This position was reaffirmed in the nineteenth century by Ruskin, and is powerfully upheld by J. A. Hobson, R. H. Tawney, and Bertrand Russell among contemporary thinkers. It needs constant restatement because of the tendency of mankind to prefer ends that are tangible and measurable to those which are more essential but less amenable to quantitative treatment.

Leading economists themselves have deemed it necessary to insist on Aristotle's maxim. Thus Marshall concludes his analysis of production with this warning: "But here, as in every other economic inquiry, we must remember that the only aim of that production is the development of the people in numbers, in health, in strength, and above all, in character." And Ely comments: "The supreme importance of man in the study of wealth has not always been appreciated by those who have expounded the science. Too often they have considered man simply as a producer of wealth, the one *by* whom the necessities, the conveniences, and luxuries of life are created, whereas the infinitely greater truth is that man is the one *for* whom they are all produced.

They forget that there are two kinds of poverty — one a lack of goods for the higher wants, the other a lack of wants for the higher goods. . . . We do not mean that the whole problem of human development is the subject of economics, but simply that manhood, rounded human development, and the equitable organization of human relationships are the objects of all social sciences and none must consider its subject so narrowly as to exclude these objects.”

§5. In other words, economics will not supply us with a catalogue of final ends or social values. It may legitimately propose contingent ends within its own sphere to serve for practical purposes, just as a military staff may, and must, direct its activities toward the effective waging of war while none the less accepting peace as the supreme end of policy. Such contingent ends are necessarily set up in economics as in every special field, and remain a most fruitful source of guidance as long as their provisional nature is remembered. “The scientific study of industry,” says J. A. Hobson, “may show that certain acts of individual or national policy make for an increase of marketable wealth. To convert this ‘is’ into a ‘must,’ and to urge this discovery as a sufficient ground for individual or national conduct, without taking into due account other effects upon public welfare which may or must arise from this commercially profitable policy, is evidently unjustifiable. For when a person or a nation is considering what line of conduct to pursue, he must take into account at one

and the same time all the probable advantages and disadvantages. In a word, he must take for his criterion of conduct the wider standard of wealth which identifies it with welfare." And although, as Pigou suggests, he may usually assume, in the absence of contrary evidence, that general welfare will be affected by economic causes in the same sense as economic welfare, the necessity of an all-round scrutiny of every proposal is a responsibility that statesmanship can never evade. It is the more binding since the economic gain and the non-economic loss arising from a given policy are seldom incident upon the same people; and the cause of those who stand to make the one is often louder-voiced than that of those who stand to suffer the other.

The essential difficulty, of course, is that general welfare is neither definable nor measurable. The criteria by which mankind must be guided in applying the precise and demonstrable results of economic science can never be similarly precise and demonstrable. The best we can do — and we have scarcely learned to do it — is to select men of culture and integrity for our leaders and, by placing them above the common struggle for economic security and putting the whole of modern knowledge at their disposal, trust that they may develop a larger vision of humanity, distant in space and time as well as near, than the rest of us can compass. But even at that we must require of them the maximum of persuasion with the minimum of coercion; for liberty is not merely an essential constituent of human welfare, it

is the very fuel from which society distills the power of self-improvement. Granted that it is both dangerous and costly, the true liberal is he who, seeing the dangers and frankly facing the costs, clings still to faith and hope and charity for his kind.

II

HOW IT ALL BEGAN

§1. Economics — or, to give it the older name, political economy — began to take shape as a distinct discipline in the seventeenth century; and as some of the problems of that day are still with us, a glance backward is worth while. Its historic origins lie deep in that tremendous change from which almost the whole of modern thought is derived — the revolt of ordinary men against the principle of *external* authority. This revolt was first manifest in the sphere of religion — because religion governed so large a part of life and thought; and if Luther could have had his way, it would have stopped there. But Luther was the voice of a greater movement than he realized. By the next century the same issue was being fought out in the wars of politics; and its consequences reached to the foundations of philosophy, social theory, law, and economics.

The movement was essentially a part of that larger evolution which is so well epitomized in the phrase “from status to contract”; for status in this sense means the position of men who were not masters of their own social destiny, while contract is essentially a relation between free-willing and free-acting individuals. West-

ern civilization emerged from the Dark Ages as a system in which the mutual relations of men, and groups of men, were determined by a preconceived idea of the rights and obligations fitted to each; a system in which there was no freedom of movement in the social scale, and in which any departure from the status in which one happened to be born was a very grave matter, calling for the express sanction of higher authority. Feudalism was the fully developed form of this system, and the nation as a unit was at first simply an extension of the feudal idea — one vast estate, with the king the supreme disposer of property, status, and almost everything else.

A status system, we may pause to remark, is not in itself a bad thing; it may in fact be better than a dynamic system that goes above a certain speed. One recent writer on economics — an American — deliberately concludes that we should try to make our civilization “more static.” There are many thoughtful people who consider that our system runs too fast for successful cultural or psychological adjustment. Technique is changing the material environment too rapidly, and we are bemused with the very fact of change. That is not a good thing. It is bringing social and international complications to which, as human beings, we are not yet equal. We have not had time to get equal in the breathless rush of technical advance. Trouble with a status system only arises when men discover their status to be radically incompatible with their desires; and in so rigid

a status system as the feudal this was bound to happen, even without the historical accident of the Black Death.

§2. In its day, however, this system was necessary and beneficial; for in order to achieve any sort of security, power had to be concentrated at a single point strong enough to quell the bloody conflicts of competing groups, and crush those that could not, or would not, be peaceably assimilated. So from the twelfth to the sixteenth centuries we see the Crown triumphant, by force, skill, or cunning, over one set of obstacles after another. There were not only the hard-shell units of the earlier feudalism to be broken down; there were other hard-shell units like the towns that levied tariffs one against another, and the guilds with their monopolistic pretensions. There was security of life to be established by the king's peace, security of commerce by the king's measure and the king's coinage, of travel on the king's highway, and of justice by the king's law. And after the unity of law were to come unity of language, with the work of Tyndale, Wyclif, and the printing press; and finally the tragic attempts to enforce unity of religion, in which a grand ideal falls in its death agony.

But in the course of this long evolution of national unity the concept of the national unit itself had changed. No longer was it, as it had been under Alfred, simply a wise stewardship, accountable through the king to God and God's vicar for the welfare of its human family. It had become the idea of the self-conscious nation, eager

to try its new strength against the world in competition for new spheres of action that the age of discovery was opening.

Come the three corners of the world in arms,
And we shall shock them. Nought shall make us rue,
If England to itself do rest but true.

The change is most clearly marked in the reign of Henry VII; of whom says Lord Bacon, he changed the policy of the realm "from consideration of plenty to consideration of power." And power meant preëminently wealth, and wealth meant "treasure." Accordingly, as the grandeur of the Middle Ages fades into the more mundane splendors of the Renaissance, we witness the completion of a policy that had been long abuilding—the policy of Mercantilism.

§3. Originally this policy was concerned with the problem of getting, and especially of keeping, an adequate supply of gold bullion in the country. Gold did not grow in Europe and was hard to come by; so, as the necessities of trade and the king's treasury demanded more and more of it, a system of trade regulation grew up designed to prevent its going abroad, and even to compel foreign purchasers to pay it in. By the time of Elizabeth this policy had expanded, through a process of trial and error, to a general concern with the "balance of trade"; a "favorable" balance being (supposedly) one that left the foreigner owing something to the home country, which something would (supposedly) take the

old form of "treasure." The idea that the benefits of a trading bargain are mutual, and in fair bargaining approximately equal,—an idea strongly upheld in the older teachings of the Church,—was completely overshadowed in national policy by the false analogy of a private trader seeking always to make a monetary gain. Napoleon's gibe at a "nation of shopkeepers" had at least this much justification. It can readily be seen that when several nations were trying to play this game simultaneously, bitter economic wars, and some military ones, were certain to result. None the less, the Mercantile idea is far from dead; it survives conspicuously, for example, in the widespread American superstition that some ill will befall the United States if the balance of commodity exports and imports becomes "unfavorable."

This policy, in its own time and circumstances, contained elements of usefulness as well as elements of danger. Its usefulness lay in the encouragement it gave to the development of trade and industry. The encouragement to trade resulted, among other things, in the growth of merchant shipping. Each nation was anxious to have its foreign trade done in its own ships by its own sailors, in order that the payments for this transportation should enhance the "wealth" of the country. England, especially, pursued this ideal in a series of Navigation Acts, discriminating against foreign shipping by means of tonnage and customs duties. In the long economic and naval warfare against Spain, Holland, and France, she was ultimately triumphant; but the attempt

to enforce the same policy on her American colonies became one of the main causes of the disruption of the Anglo-Saxon unity.

Another phase of this Mercantile or National policy (as it is sometimes called) was the importance it attached to the element of domestic labor in goods sent out of the country; the idea being, of course, that the labor added something to the value of the materials against which there was no corresponding debit, so that the net gain on manufactured goods was greater than on any others. Accordingly each Western nation strove to secure and encourage its raw-material supplies, even to the extent of regarding its colonies as mere purveyors of materials for its own manufacture; and to obstruct the entry of manufactured goods, even to the extent of regarding its colonies as potential rivals. Export industries were meanwhile aided by the importation of skilled workmen, and by direct bounties or subsidies.

§4. In the long run, the most important result of it all was the splitting of Western civilization into a series of competing national groups whose everlasting rivalries will probably end this phase of human evolution. But even in the short run, retaliation was frequently the most obvious outcome. An illuminating seventeenth-century case is typical of a good deal. The old English wool export had by that time become largely a cloth export; but the Dutch, though they lacked an independent supply of wool, had managed to work up a

considerable industry in cloth finishing and dyeing, and so preferred to take English unfinished white cloth and do the rest themselves. This was not at all to the liking of the English crown, who saw it merely as giving to foreigners employment that ought to be preserved for Englishmen. So from the sixteenth century attempts were made either to prohibit the export of unfinished cloth or to compel the foreigner to buy so much finished along with every shipment of unfinished. The Dutch replied at last with a prohibition of the import of finished cloth; and trouble naturally arose in the English dyeing and finishing trades. King James I's next move was a royal proclamation practically forbidding the export of any unfinished cloth; and as the regular trading company, foreseeing what would happen, balked at the scheme, James chartered a new company to carry it through. The Dutch reply was a checkmate: *all* English cloth was barred from Dutch ports. Serious distress in the English cloth trades and a bitter tariff war with Holland ensued; eventually the whole scheme had to be abandoned. "Time," remarked King James sadly, "discovereth many disabilities that cannot at first be seen."

§5. Time was even then discovering more disabilities than had occurred to His Majesty. The day was already past when Lord Bacon could write with complacency, "Howsoever it be for happiness, without all question for greatness it maketh to be still for the most part in arms." This "greatness-of-the-nation" policy was al-

ready being questioned. Here and there practical men were getting anxious about the Baconian distinction between greatness and happiness, and looking back regretfully on the "people's policy" of Saxon and Plantagenet times. "Patriotism," President Coolidge once beautifully remarked, "means looking out for yourself by looking out for your country"; but Englishmen of that day were beginning to doubt it. "The art of governing and the true Politicks," said one, "is how to preserve the subject in Peace and Plenty." But the Peace was too frequently imperiled and the Plenty was becoming less and less general. For the national policy, carried to its ultimate ideal of militant self-sufficiency, meant in cold fact that the common folk were forced to subsidize the "greatness of the nation" through the higher costs of commodities that could be far more cheaply obtained elsewhere.

§6. This conclusion had to wait for its complete statement in *The Wealth of Nations* (1776); but already in the seventeenth century, along with a host of specific inquiries into the results of the national policy, emerged the fact that that policy tended to favor the traders and the manufacturers at the expense of other elements of the commonweal. This was so conspicuously the case in France under Louis XIV and his finance minister, Colbert (1619-1683), as to produce an emphatic reaction in economic thought. A group known as the Physiocrats, summing up a good deal of earlier criticism, straitly denied that the labor of the traders and manu-

facturers was genuinely productive. The only really productive labor, argued Quesnay, their leader (1694-1774), was labor upon the land, because that is the only kind that yields a net product or increment — something more than one had to begin with. Accordingly it is the land workers, if any, that should be especially cared for by the state — and their immediate need was not regulation, but *freedom* of trade. This thesis also is echoed in a modified form in the *Wealth of Nations*, in the importance attached to the landed interests.

But for the final attack on this policy of state regulation something more than criticism was needed. What was needed was a positive argument to prove that things would get along well enough without it; that if people were let alone, the national welfare would still be secured and promoted by their free activities. And it was precisely this argument that formed the culminating point in “the revolt of ordinary men against the principle of external authority.”

§7. There is a story of the French merchants protesting to Colbert against his latest batch of regulative edicts with the cry, “*Laissez-nous faire.*” The phrase repeatedly appears in the attacks made by Turgot on the monopolistic privileges of the guilds; and the school of physiocrats put behind this slogan an elaborate philosophy based on the idea of “natural harmony.” The roots of that philosophy lie, however, in the English philosophers of the seventeenth century, especially Locke, Hume, and Cumberland. Most modern soci-

ology can be derived from Cumberland's postulate of a "social instinct"; and this postulate, elaborated in many speculations from Locke's *Essay Concerning Human Understanding* to Adam Smith's *Theory of Moral Sentiments*, supplies the groundwork of ethical utilitarianism and political *laissez faire*.

In its simplest form, the argument maintains that, as man is by nature a social animal, his free activities are likely to promote rather than to obstruct the interests of his fellows. "Our own happiness," says Cumberland, "cannot be separated from a studious concern for the happiness of others, that is, the universal social happiness of all. . . . The soul is naturally adapted to enter into society and unless it does submit to enter into a social state, it neglects its principal use and employment, and lets go the best advantage of its own natural disposition." The well-being of others is so essential an element in man's own well-being, his nature is so sympathetic to the attitudes and affections of his kind, that even self-interest forbids selfishness. And the more truly he understands his own interest the more surely will the good of society follow upon the pursuit of it. Thus it was possible for Bentham to postulate "enlightened self-interest" as the criterion not merely of expedient, but of *right* conduct; and thus it was possible for Adam Smith, at a time when the regulation of trade had become both onerous and dangerous, to attack the whole system at its philosophic roots as well as in its economic branches.

The very definition of the subject matter of the *Wealth of Nations* suggests the change in standpoint:—

Political economy, considered as a branch of the science of a statesman or legislator, proposes two distinct objects: first, to provide a plentiful revenue or subsistence for the people, or more properly to enable them to provide such a revenue or subsistence for themselves; and secondly, to supply the state or commonwealth with a revenue sufficient for the public services. It proposes to enrich both the people and the sovereign.

In this view, not merely expediency, but justice also, demands that we should rely on the nature of mankind acting in a condition of “natural” liberty. We need not apprehend, as did Hobbes, that the resulting state of existence will be “solitary, poor, nasty, brutish and short”: the “social instinct” has determined the matter otherwise:—

As every individual endeavours so to direct industry that its produce may be of the greatest value, every individual necessarily labours to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By directing industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention.

Accordingly, the true function of government is, in brief, simply to preserve the conditions of freedom, and

especially that first condition, security; and to perform that everybody's business which is nobody's business. By attempting so much more than this, argues Smith, the Mercantile system had not merely wasted effort, but had wrought positive and grievous harm to society. "Consumption," he says, "is the sole end and purpose of all production; and the interest of the producer ought to be attended to only so far as it may be necessary for promoting that of the consumer." But in the Mercantile system, especially the phase of it which governed British colonial policy, "the interest of the home consumer had been sacrificed to that of the producer, with a more extravagant profusion than in all our other commercial regulations." Further, he maintained — and would doubtless still have maintained could he have seen modern America — that the artificial stimulation given to manufacture under a protective system had wrought an undue and premature urbanization of society, which even in his day was ominous of the ills as well as the goods that were to flow from the industrial revolution. Smith did not hesitate to advise state action in so far as he thought it competent to remedy the defects of his "obvious and simple system"; and indeed his preëminence rests upon the magnificent sense of reality with which he applied his philosophical premise. This it is that renders him one of the founders of modern liberalism. He is, as economist, far less concerned with the "invisible hand" than with the play of self-interest and common sense in a human nature that we indubi-

tably know; and this splendid sanity saved him alike from the fantasies of romantic radicalism and from the sterility of his more doctrinaire exponents. His is the first really systematic and objective analysis of cause and effect in that sphere of human conduct called "economic"; and while experience has shown that a system of "natural liberty" is neither obvious nor simple, and that free human nature is not as adequate to sustain it or perhaps even as desirous of it as he supposed, the foundations of his work remain ideally sound. The humanism of *The Wealth of Nations* did more than any other single factor to release the economic life of England from the corruption of politics and the tyranny of statecraft, and still animates what is left of genuine liberalism.

III

HOW IT GOT INTO DIFFICULTIES

§1. The gradual liberation of trade and industry during the sixty years following Adam Smith's death in 1790 saw also that mechanization of production and transportation known as the Industrial Revolution, and was in no small measure its cause. For while the basic applications of the new power might have been made in any case, it was the opening of markets on the one hand and the abolition of the last vestiges of the status system on the other that so greatly enhanced both the scale of production and the speed of invention.

The same period saw a revolution in agriculture and stock raising no whit less important than the revolution in manufacture; and in both cases the technical progress was partly cause, partly effect, of the concentration of control over the means of production — including land. The new tools of industry, driven first by water power, then by steam, demanded ever-larger accumulations of purchasing power for their acquisition, and for the acquisition of raw materials; and while they enormously increased the output of goods, they also tended to lengthen the period between acquisition of materials and sale of the final product, during which labor had

to be maintained. Land had been increasingly regarded as a commercial asset ever since the seizure of church property by King Henry VIII (1536). The enclosure movements of the sixteenth to the late eighteenth centuries had drawn into larger units first the scattered strips of mediæval farming, and then the wastes and common lands of the villages. These larger units, devoted either to pasturage or to improved farming, made possible increases in the food supply or the wool crop; while at the same time they reduced some of the erstwhile "yeomen" to the position of hired laborers, and sent numbers of the poorer country folk to join the rapidly growing urban proletariat.

§2. But beneath all these rapid and visible changes a new spirit was permeating society — a spirit which swept away the last vestiges of Catholic civilization, and more than any other factor made possible the modern world: the spirit of capitalism. By capitalism we do not, of course, mean simply a system in which large accumulations of purchasing power are necessary to carry on the economic life of society; for that might be true of any one of half a dozen systems in the modern world. We mean a system in which, first, the ownership of the principal means of production, including land, is vested in a minority of private persons;¹ second,

¹ In the United States, in 1921, 10 per cent of all property owners held nearly two thirds of the national wealth; 1 per cent of this group held one third. What the rest of the population owned was mostly personal effects — a quite different sort of ownership (see p. 31).

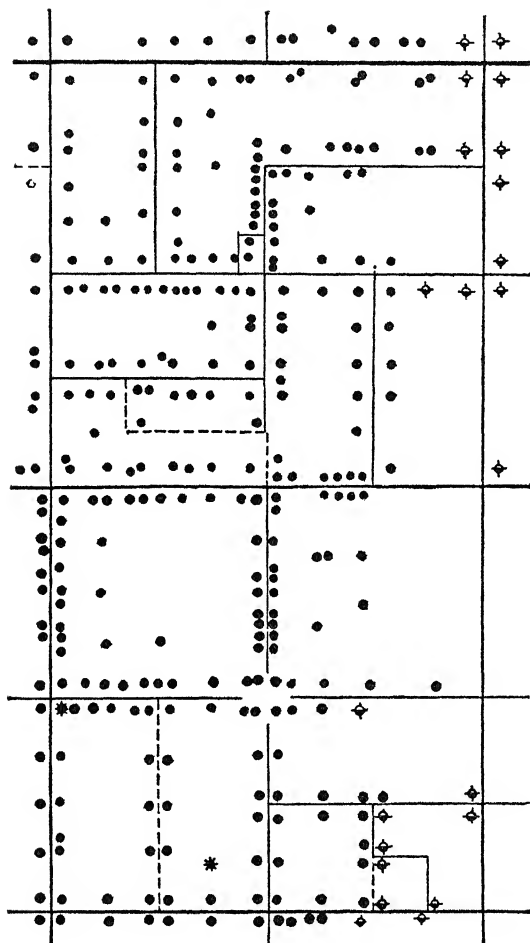
the right to direct economic activity is associated with ownership as such; and third, the quest for unlimited acquisition is accepted as individually meritorious and socially useful. These three elements of Western, particularly American, civilization deserve separate consideration.

§3. The dominant theory of property, up to quite recent times, rested on Locke: we may call it the *absolutist* theory. Locke represented property (defined in a somewhat curious way) as a "natural right" existing prior to civil government. Certain American states used this thesis against the Federal government in the slavery controversy, and Abraham Lincoln had to assert with force of arms the rights of life against property in the greatest expropriation of modern times outside Russia. The contrary theory to that of the absolutists is the *social* theory of property. It is well expressed in the following statement of Lord Bramwell: "Private property ought to exist, if for the good of the community, in such things, and to such extent as would be for the good of the community. . . . If it could be shown that the existence of private property was not for the good of the community, the institution ought to be abolished." It would be going too far to say that this theory is generally accepted in the quarters where policy is defined or applied. And in any case, all that it practically asserts is the absence of any *a priori* objection to change. It does not carry us very far. For the real issue is not the abstract question whether or no social

welfare is the sole and sufficient justification of private property, but whether or how far, in specific cases, private property does actually promote social welfare.

Look, for example, at the following section of a map of an oil field. It is an actual case, showing the division of landownership in small surface lots which bear no relation to the scientific requirements of the oil strata. As soon as one prospector has struck oil, competing surface owners hasten for their share. Unregulated drilling takes place as near the original find as the property lines will allow. Far more wells are sunk, far more capital invested, than are economically or scientifically needed; geologically speaking, it is probable that all of this frenzied development is in the wrong place. Far more oil is brought to the surface than a wise direction would allow; the waste, both of oil and of gas, is colossal. Yet each individual, as an individual, is powerless to remedy the situation.

Or take the development of the coal areas in England, as described by the Royal Commission of 1926. "The areas in coal worked from any particular pit have not necessarily been those areas which could most economically be worked from that pit, but those for which the mine owner has succeeded in obtaining leases" from the surface owners. Mine owners have had "to obtain an average of no fewer than five leases from five different land owners, and in some cases to negotiate as many as fifty leases before securing a workable plant." The effects of such a system in wasting coal, increasing



traveling distance, duplicating plant shafts and pumping machinery, and barring the way to economic centralization, need no emphasis. But all attempts to correct such a state of affairs have been met by the absolutist theory of property. It was very plainly stated as far back as 1911, when the British government passed a law excluding the land owner from actual management of a mine unless he were properly qualified. The Mining Association (of owners) protested: "That an owner must not have control over his own property was a monstrous state of things." When private ownership results in costs to the community as high as those in the above cases, a direct clash is apt to arise, bringing with it political and social problems of the gravest character. There are very few cases in history where a large-scale transfer or abrogation of property rights has been accomplished without ultimate resort to physical force.

On a smaller scale, however, governments are now continually modifying the content of the term "property" in the interests of the general good. They modify it in two directions—extensive and intensive. The class of things that may become objects of property right has changed continually since Lincoln's day—though most of the change has consisted in an increase, especially in regard to intangible things such as are represented by patents, copyrights, and claims on business income or assets. Technical progress frequently raises new problems as to the extensive content of the property institution. Can a radio wave length be property—

when we are not sure what (if anything) it is that "waves"? Can a news item be property before it is printed? A basic chemical process? An idea for a movie? Or for a hat? All these are cases that have come before the courts for decision. As soon as any new thing or notion promises to be economically advantageous, somebody is certain to claim a property right in it, *in order to prevent others from using it*; and it is far easier to grant than to rescind such claims.

But property is "a bundle of rights." Its essence — as distinct from mere possession — consists not merely in the assertion of a claim, but in the recognition of that claim by organized society; and such recognition may be granted only upon terms. Accordingly, along with the *extension* in the reference of the term "property," we find an *intensive* limitation of the rights conveyed. The fact that you own something — a horse, a house, an automobile, a business — does not mean that you are free to do anything you like with it; as you will soon find out if you make of it a public nuisance. Then what is called the police power of the state will acquaint you with certain intensive limitations of the property right for the case in question. The owners of public utilities, especially railroads, are subject to very close instruction and supervision as to how they must not, and how they must, employ the various things they may own.

This phase of modern state action has become immensely important because of the development during the past century from "property for use" to "property

for power." The sort of property on which Locke posited natural right, and on which individualism was really based, was property for use: "As much as any one can make use of to any advantage of life until it spoils, so much may he by his labour fix, and property in whatever is beyond this is more than his share." But that is not the sort of property that underlies our economic system. Our system is built on property held for power — power not merely over the production and disposition of vast quantities of things, but over the lives and operations of vast numbers of people. The development in credit, of the trade in titles to property, of the joint-stock principle, and of the modern corporation, have made possible an unprecedented concentration of economic control. Lastly, in the United States, the successful claim of the huge corporation to be an "individual" in the sense of the Constitution, and as such entitled to all the guarantees and immunities designed originally for genuine human beings, has put a tremendous legal sanction at the service of the economic ruling powers which they have not hesitated to use to the utmost.

The wide distribution of stock which certain American concerns are now encouraging does not in fact represent a democratization of control. Even where this stock carries voting rights (and it is often devoid of any), the more widely it is distributed the more easily can control be centralized in the hands of an active minority. Further, the spread of non-voting stock does not imply any departure from the principle that control goes with

ownership; for the purchase of non-voting stock merely represents a voluntary surrender of a fractional share in control to directors who still serve the interests of the owners as such.

§4. The principle that control goes with ownership is indeed almost axiomatic in our Western thought; though we can at least imagine systems in which control might go with labor instead, or with the consumers of the particular product, or with consumers as a whole, represented (theoretically) by the state. Why is control associated with ownership? How did the association arise? What purpose does it serve?

To take the last question first, it is easy to see the logic of the association in earlier times. The early writers, from Locke to Smith, thought mainly of the farmer working his own land, and the merchant or manufacturer going into business with his own savings: cases of what we should call the "owner-manager" type — a diminishing class in the modern world, confined mostly to small business (Mr. Henry Ford is a notable exception). In such cases, society is likely to benefit by leaving the man alone — *laissez faire* — because he will bring the maximum of shrewdness and energy to bear on his own resources, and if he makes mistakes, he himself will be the principal loser.

The world has gained tremendously by this policy; and the growth of American civilization could have been as rapid under no other. It has crystallized in the maxim that "control should lie where the risk is borne"

—an essentially sound adage. The important issue now, however, is, Who bears what risk? Mismanagement of corporate business may mean loss for its owners — perhaps ruin for some of them. It may also mean want or starvation for hundreds or thousands of laborers and the gravest inconvenience for the community. Nor is it certain that the interests of the owners as a group are identical with those of the laborers as a group or the community as a whole; and doubt arises whether society can afford to give *carte blanche* to giant corporations whose activities may plunge it into war, or impair its physical or moral efficiency.

Again, the early exponents of individualism had unconsciously accepted as their datum, not the “human, all-too-human” tenement of incompatible cravings and unreasoned appetites that we know only too well, but the supposed rational individual of the philosophers and scientists. This somewhat anæmic, but otherwise admirable Crichton, suitably endowed with “social instinct” and “benevolent sympathy,” could then be given his head in the pursuit of “enlightened self-interest”; and it was thus possible for individualist theory to assume almost without examination “that individuals know their interests in the sense in which they are identical with the interests of others, and that they will, in this sense, follow them.”

Now if we scrutinize this assumption without prejudice in favor of ourselves and our place in the cosmos, it appears somewhat extravagant. A century’s tempest-

tuous experience of individuals acting in association has taken most of the optimism out of this philosophy. Even if we assume human conduct to be rational in so far as it is individual (and "rational" is no synonym for "wise") we find that there are few affairs in which men do act mainly as individuals; and the characteristics they show in association suggest an analogy with the brutes rather than the angels. Accordingly "social instinct" has now become "herd instinct," the moral ends "crowd absolutes," the popular ideals mere "stereotypes." It is group action rather than individual action with which at every turn we have to deal; and we cannot safely argue our way to its laws from what we fondly suppose the ideal human individual (namely, one's self) to be.

Human conduct is in fact almost entirely a matter of group action, and the individual is, *for practical purposes*, merely a point at which innumerable groups overlap — groups coöperating and groups competing, organized and unorganized, stable and transient, self-conscious and unself-conscious, progressive and conservative. The most general and loosely organized groups cohere almost entirely through mass emotion and suggestibility; others reach a high degree of explicit purpose and tenacity. Economic groups are only one species among many; and even in this sort there is every variety of structure. The widest group — that of consumers in general — is hardly organized at all; its action is only to a very small extent rational, and its ignorance of its own interests is profound. Some theorists maintain that

the State is the explicit organ of this group par excellence; but a glance over the policy or the membership of the British Parliament or the United States Congress makes the theory seem somewhat idealistic. Certain particular classes of consumers are becoming organized, under stress of necessity: buyers of raw material, if we may include them in the general category, are in many cases now far advanced. It is probable that the struggles of consuming against producing groups will hold the centre of the political arena in the next twenty years, especially in view of the fact that labor is now being compelled to a choice of allegiances.

Producers as such are, and always have been, nearer the stage of conscious group existence. In the big industries they now show a high degree of articulation which is, very significantly, crossing the political frontiers. The action of such organized groups is frequently rational to a high degree; but it is not necessarily more "social" on that account. In this respect, though the "economic man" of early utilitarianism was a myth, the economic group is nothing less than a portent; for in it we find the pursuit of self-interest dominant to a degree that is literally inhuman. Trade-union officials and corporation directors are not paid to exhibit "social instinct" and "benevolent disposition"; they are paid to pursue a more exclusive devotion to exclusively economic ends than most of their constituents, as individuals, either would or could maintain. Of course, every such group is affronted by the suggestion that its action

is not solely directed by an impartial application of pure reason to the entire needs of the entire community; but that is merely the consequence of our need to strengthen our self-esteem by inventing ethical justifications for what we find it expedient to do. And it is futile to argue that if only the "self-interest" were more "enlightened," every such group would find its own interest coincident with that of society at large. The affair is not so. There is no such preëstablished "natural" harmony. The thing is a struggle from start to finish, in which some have to lose — or resign; the betting is heavy; we need an umpire and (probably) the police within hail. Mussolini frankly defends current capitalism as a species of natural evolution; but it is not the nice amiable nature of the utilitarians he refers to, but the "red in tooth and claw" virago we have not yet managed to educate.

One further qualification: The "laws" or tendencies we deduce from the study of economic conduct act always in a setting of customs, fixed ideas, and social institutions which are not, at any one time, the product of individuals or of pure reason acting at that time. They are, as it were, a "given" factor of the situation, as much an inheritance of the body politic as are its dispositions of the body human. Obviously, the whole framework of society is not, and cannot be, fashioned anew for each succeeding generation; nor should we wish to see it put to the hazard of human impatience every thirty years or so. Moreover, we are all by nature creatures of habit, plastic to the ready-made patterns of

thought and behavior that are handed down; we do not "rationalize" more of our conduct than we are obliged to. The fact becomes important, and troublesome, in a period of unregulated technical change. For then, as Professor W. F. Ogburn has shown, the material part of culture is liable to advance at a pace far too fast for the immaterial part, with the result that all sorts of strains are set up in the body politic, and even in the individual mind.

It is here that the more purposive social groups take hold. Laws, customs, social institutions, survive so long as they serve the interests of the stronger groups of the community — which may be, of course, long past the point at which they are suited to the mere numerical majority of individuals. And in certain cases we find this natural hang-over — this "cultural lag" as it has been called — deliberately reënforced by the action of those groups in the community whose position will be adversely affected by change. Politics — which is nowadays merely a branch of applied (or misapplied) economics — exhibits this influence in every Western nation.

§5. It is evident, on all these considerations, that the traditional association of control with ownership, valuable as in many cases it still is, raises some difficult problems under modern methods of enterprise and modern types of property. But the biggest problem of all still remains to be considered — that of the end to which control is directed. Underlying all consideration of the methods and instruments of economic control lies the question of the spirit in which these things are used;

and to understand that spirit we must enter for a moment the sphere in which spiritual values become explicit — the sphere of religion.

When Protestantism shattered, in northern Europe, the framework of ethical and social doctrine upon which civilization had developed, it had to devise a new discipline for the individual. It assumed from the outset that the individual was the main thing, and it was weak from the outset in its understanding of corporate life. Calvin (1509-1564), the real architect of this new discipline, inculcated, it has been said, an ethic of good works in contrast to the Catholic ethic of good intentions. The individual (save for a few fortunate exceptions) could not know for certain whether he were one of the elect; the prudent thing therefore was so to act that at least he deserved to be. He should eschew the world, the flesh, and the devil, and devote himself with unsparing energy to the pursuit of his worldly calling. As Richard Baxter (1615-1691) put it: "If God show you a way by which you may lawfully get more than in another way (without wrong to your soul or any other) if you refuse this, and choose the less gainful way, you cross one of the ends of your calling, and you refuse to be God's steward, and to accept His gifts and use them for Him when He requireth it: you may labour to be rich for God, though not for the flesh and sin." Coupled with the denial of spending for the mere enjoyment of life and the arts, or even for ordinary human charity, such teaching resulted in a sort of hallowed acquisitiveness. Among the followers of Him who bade us consider the lilies and

take no thought for the morrow, thrift became a cardinal virtue. Abstinence and asperity usurped the tradition of one who blessed with wine the marriage feast and supped with the untouchables. The tangible accumulations of the business life loomed larger in men's eyes, as time went on, than the intangible treasure of which they were supposed to be the token. And while every precaution was taken (at compound interest) to forestall the moth and rust of this world, a spiritual corrosion attacked the stern values of pristine Puritanism. John Wesley (1703-1791) described the prospect in pathetic terms: "I fear, wherever riches have increased, the essence of religion has decreased in the same proportion. Therefore I do not see how it is possible, in the nature of things, for any revival of true religion to continue long. For religion must necessarily produce both industry and frugality, and these cannot but produce riches. But as riches increase, so will pride, anger, and love of the world in all its branches. . . . So, although the form of religion remains, the spirit is swiftly vanishing away. Is there no way to prevent this — this continual decay of pure religion? We ought not to prevent people from being diligent and frugal; we must exhort all Christians to gain all they can, and to save all they can; that is, in effect, to grow rich."

The advice was widely taken. Modern America is the monument of those who succeeded. The number of those who failed is, however, somewhat embarrassing.

PART II

BUILDING THE NATIONAL HEAP

IV

RICH AMERICA — AND HOW

§I. The United States — as its citizens never tire of reminding one another — is the richest nation in the world. How much richer is it than the other nations? And why?

As to the first question, there is now plenty of evidence dealing with both national wealth and national income. For our purposes, and indeed for most purposes, national income is the more useful basis: it is more manageable, contains less guesswork, and excludes the “potential” element altogether. Here is a simple comparison for 1927 showing national incomes per capita in dollars of 1913 value (to eliminate difficulties arising from differing population and price levels): —

United States	\$442.00
Great Britain	249.00
France	180.00
Germany	115.00
Italy	72.00

These figures, it must be remembered, represent total national product from all sources averaged over the entire population, not merely over the actual income re-

ceivers. And of course we cannot argue direct from them to the general welfare of the people in these countries. The figures do not prove that the average American is six times happier than the average Italian. If all that the Italian wants is a loaf of bread beneath the bough, a flask of wine, a book of verse, and so forth, he may be happier than the tenant of God's own country. We are here in a region of incommensurables. But this much may be said about it. A good part of human happiness consists in the opportunity for choice among many lines of productive work; in this respect the material prosperity of the United States is a relevant and important factor. It allows a freer range of personal experiment, renders a single mistake less fatal, and engenders a stimulating (sometimes too stimulating) atmosphere of hope and optimism.

§2. Another, and more strictly economic caution: if the number of people receiving (or rather, reporting) millionaire incomes in America were several thousand, instead of a few dozen, while at the foot of the scale there was a larger mass of poverty, though the average income figure might be unaffected, average welfare would be very much impaired. For money incomes, like other things, diminish in utility (want-satisfying capacity) as they increase in amount, and what the rich gained would bring much less welfare, in such a transition, than what the poor lost. The question of distribution is all-important in regard to average welfare; and the same gross income may bring very different degrees

of welfare according as it is widely or narrowly distributed.

Comparisons of distribution between different countries are too technical to be entered upon here. We happen to have, however, thanks to the International Labor Office at Geneva, some interesting comparisons of wage levels in the different countries that we can set alongside these figures of national income. The nearest comparable date is October 1928; and the wage figures are those of *real* wages — that is, wages reckoned in goods, not merely in money — expressed as percentages of London. Here they are: —

Philadelphia	189
London	100
Berlin	70
Paris	58
Milan	49

Although we cannot draw any exact conclusions from a comparison between these two sets of figures, they suggest that as compared, say, with England, the American wage earner is rather better off than the comparison of the national incomes would lead us to expect. Putting it broadly, there is no reason to think that the distribution of national income is more uneven in America than it is in other industrial nations.

At the same time, it is startlingly uneven. Purchasers of this book, belonging mostly to the comfortable classes, do not realize what a small section they represent. If they will study the following table, they will acquire a

new vision of America that may help them a good deal in their understanding of political, as well as economic questions.

INCOME DISTRIBUTION FOR 1918

Up to \$1,000	38.75	per cent of all income receivers	} 60 per cent
1,000- 2,000	47.17	" " " " " "	} of all income
2,000- 3,000	8.16	" " " " " "	} 21 per cent
3,000- 5,000	3.68	" " " " " "	} of all income
5,000-10,000	1.56	" " " " " "	} 19 per cent
Over 10,000	.68	" " " " " "	} of all income

It appears that 85 per cent of all the people who received money incomes (excluding soldiers and sailors) were below the two-thousand level; and there is good reason to think that inequality has increased, rather than diminished, since 1918.

§3. One hears a great deal nowadays about the inequality of incomes and the necessity for drastic measures of equalization. And we can all agree that average welfare would be increased by a nearer approach to equality — provided no serious damage were done to productivity in the process. There are some people — the left wing of the British Labor Party, for instance — who desire that the State should use the taxing power directly as a means of taking from the rich and giving to the poor. Such a conception is far too simple. To begin with, there is not enough national income at present to make much difference, however drastically such a policy were applied. The poor are so much more numerous than any other section. Sir Josiah Stamp

has shown that a simple equalization of existing British incomes, consistently with the carrying on of social life and government as at present constituted, would not give more than five shillings a week to the average poor family. Of course, five shillings is something, though it is not the sort of something the average radical has in mind. But there is a further consideration. Questions of national income must be considered in the light of the future as well as the present; and before any policy of direct redistribution were entered upon, it would be imperative to prove that the size of the national income would not be very adversely affected in the near future. All existing evidence suggests that it would. More equalization would undoubtedly be a good thing, and big business itself, when it talks about the failure of "purchasing power," is coming to admit the fact. But the problem cannot be solved by operating simply upon incomes. It must be tackled at a much deeper level of the economic structure, and a good deal more analysis is necessary before we can consider it.

There are other matters beside distribution that affect the relation between the size of national income and the welfare it brings. The conditions under which the income is earned obviously affect it; over-exploitation of either human or natural resources is a decidedly negative contribution to welfare even if, for the time being, it makes a positive contribution to national income. Some writers go further and add that the relation is also affected by the way income is spent; but that is to court

the fallacy of reading one's own desires into other people's heads. Personally, if I were compelled to live in a small New York apartment and travel every day to an office in the rush hours on the subway, I should consider the amount of welfare I was getting somewhere near zero, whatever my income. But there are apparently millions of people who like it, and are perfectly content with the system that makes them like it; and it is going to be difficult to persuade them that they ought not to like it or submit to it, though there may be good reasons for trying.

§4. Now let us take up the second question we put at the head of this chapter. We asked, it may be remembered, How much richer is America; and why?

Many Europeans, and perhaps some Americans, are rather tired of hearing that the United States is a "young nation." After all, as a political system, it is now older than almost any in Europe; and so far as international trade is concerned, it is now definitely what economists call an "old country." But political systems matter rather less than we think they do, and foreign trade matters only about one quarter as much to America as it does to Britain. In a sense that people over forty will admit as a criterion, the United States may be called young: she has tremendous energy reserves to draw on.

The simple and fundamental fact, from which nearly all the rest follows, is the favorable ratio of population to natural resources. The United States had in 1930 a population density of 41 per square mile; England

and Wales had 701. It is impossible to overstate the importance of that contrast. In the years 1923-1924 the United States, with less than 8 per cent of the world's population, produced 25 per cent of the world's wheat, 58 per cent of its cotton, 43 per cent of its coal, 72 per cent of its petroleum, 53 per cent of its steel and copper.

Only a thoroughly industrial society can support such a density of population as the British at the Western standard of living; but as the world fills up, the prospect is that more and more manufactured goods will be demanded in exchange for a given amount of food and raw material. That may mean that the industrial worker will have to give more hours of his labor to buy a given quantity of food or clothing; in other words, that his standard of living will fall. Whether it *must* mean that is one of the main problems we have to examine.

§5. Or consider what the population ratio means in terms of power resources. The United States has about 23,000 tons of coal reserves per capita as against 5000 tons for Britain and 4000 for Germany. Under such circumstances, for Britain and Germany to go on relying on the export of raw coal to balance their import trade is sheer lunacy; and Germany is waking up to the fact. Not only is the American reserve bigger, but it is easier to get at, as is the coal now being used. Power production therefore is possible on a much wider scale. That is why the American output per man runs at least 50 per cent higher than the British: in the maximum year 1918 it was nearly five times as high. A similar tale could be

told of many other power and raw-material resources; and one of the results is that there is over twice as much mechanical power available per worker in American industry. A recent inquiry made by the National Industrial Conference Board of New York shows this difference in detail for some of the leading industries.

INDUSTRY	HORSEPOWER PER WAGE EARNER	
	<i>Great Britain</i>	<i>United States</i>
Steel works and rolling mills	9.15	12.85
Machinery	2.60	3.62
Motor vehicles	1.13	2.75
Electrical machinery	1.28	2.46
Shipbuilding	2.70	6.04
Cotton goods	3.14	5.02
Woolen and worsted	1.97	3.28
Boots and shoes	.48	.67

Though the general contrast here is valid and suggestive, the reader must not assume that it would pay English industry in every case to raise its mechanical equipment to the American level. That question brings into relief another factor of tremendous importance in American prosperity.

§6. The age of power really began in America about forty years later than in Europe; but it began not only with natural resources relatively and absolutely greater, but with the advantage of an enormous area of free trade to work in. It is amusing to hear Americans talk about prosperity being due to "protection." Protective tariffs certainly accelerated the industrialization of the United States, perhaps over-accelerated it; but protec-

tion would have been worse than useless if it were not for the extension of the free-trade area over the continent. It was the size of the free-trade area that made possible both the markets for big-scale production and the concentration of production at the most favorable points in the area. Imagine how different the story would have been if the continent had been split up into dozens of quarrelsome political units hedged about with all kinds of constantly changing tariff systems, each trying to compete with the other and to develop within its own borders its own petty enterprises, whether suitable or not. How far would American efficiency or big-scale production have got under those circumstances?

Europe's resources (if we may for a moment speak of Europe as a unit) are not so far inferior to those of America but that modern science could raise the European standard of living up to, and even beyond, the American level if only Europe could compass a like extension of the area of free trade. Alas, that possibility grows month by month more remote; yet it must ever haunt the dreams of the Old World economist, a bright vision of what could be done with power production concentrated for long-distance transmission at the mines and the waterfalls, basic manufactures rationalized across the political frontiers, scientific agriculture given a chance to do what it could with the best soil in the world, trade and travel free from the customs nuisance — until the poor economist wakes up and remembers

that politically he hardly dares think of himself as a European.

§7. In conclusion, let us turn back to the national income figures for a moment, and inquire how they are arrived at; because the clue to the whole method of economics (and incidentally of this book) lies in the answer.

Sir Josiah Stamp, who has a genius for rendering economics lucid, and even interesting, has put this matter of national income into a very happy analogy: —

Suppose that all the services and goods that are produced by us as a community in a year are all piled in the centre of this room in a great miscellaneous heap. Every one of you, in the work that you do, is putting that work there. It includes the boots and the clothes that are made, the loaves that are baked, the sheep that are reared, the sermons that are preached, the songs that are sung, the physician's advice, the pilot's skill, the banker's knowledge, the business man's services of organization, the crossing sweeper's service, indeed, everything that can be given by us whereby we have a claim upon the work of our fellow men who are contributing to the heap, including the services of those who have helped to make the heap larger than it would or could be if we started afresh without the assistance of piled-up capital goods saved from the heaps of former years. Let it be supposed that we have no such thing as money, but that for each contribution we have made to the heap there is given to us a "labor or services ticket" with a claim to draw something out of the heap in return — if you like, for the moment, equivalent in its labor or equivalent in its skill, or its

sacrifice, to what we have put in. The people who have refrained from an earlier consumption on the faith of their title to later consumption somewhat larger in extent also have their title to the heap. Now the total of tickets giving titles to the heap will exactly equal the mass in the heap, and when we have all drawn out what we want of other people's products and handed in our tickets the heap will have vanished. It is true that when we present our tickets, we shall, perhaps, in our demands for a particular thing that is in the heap, exceed the actual supply; in other cases we may ask less. There may be fewer loaves put upon it than we want, and, perhaps, more servants and third-rate music-hall songs than there is a demand for, but these are questions of bad anticipation of demand, and we must rule them out for the moment. The point is now that we cannot, as a whole, get more out of the heap than we have put into it.

Now following the lines of this parable, it should be possible to measure the "national heap" in two ways. We could either take the people *coming* to the heap, and add up (of course, it will have to be in money values) the things they are bringing in, the sheep and the sermons, the clothes and the songs and so forth, taking care, incidentally, not to count the same thing twice over — the wool on the sheep's back, for instance, when it reappears as a coat; or we could take the people *going from* the heap and count up all the "tickets" they were taking away. The former we might call the "values produced" method, the latter the "incomes received." As a matter of fact both methods are used; and the first time the work

was done in the United States, in 1918, the two independent sets of investigations came out within 10 per cent of each other — a very remarkable achievement.

§8. That is the scheme we are going to follow in this study. First we shall consider the ways in which values are produced, taking each of the great types of production in turn — extractive, genetic, manufacturing, transport, and so on. Then we shall consider the ways in which values are shared out, as types of income. All the while we shall bear in mind that we want to know, not only why the shares are what they are, but whether they could be, and if so whether they should be, altered; and if so, how.

V

BUILDING THE HEAP: COAL

§1. From sun and earth originally come all the goods whose progress to the "national heap" we are now to examine. Some kinds of both material and energy (if the physicists still permit the distinction) — light, air, water, and others less familiar — are replenished incessantly. Others, such as the minuter types of organism, are replenished in very short periods. For the rest the periods of replenishment gradually lengthen. We may get two or even three hay crops in a year, but of the grains and fruits only one; and unless we adjust our planting and our consuming the supply will fail us. We have learned therefore to organize and control the replenishment of many of the animal and vegetable things we need; though in some fields there is yet a wide gap between knowledge and practice.

But when from this growing world we dig down to the fuels and the minerals, the replenishment periods become too long for our control. We know in general terms the biographies of our peat and lignite and oil and coal and some of the metals; but we cannot reenact their life histories. Accordingly we recognize a broad distinction between the industries in which we can, and

cannot, control the replenishment process, calling the former genetic and the latter extractive. In the extractive industries we are appropriating from a natural supply which we cannot renew; in the genetic we coöperate with the natural forces of growth and reproduction to renew, or increase, our supply. There is a doubtful zone between these types; and in this doubtful zone, until very recently, were hunting and fishing and lumbering — industries that certainly ought not to be extractive if, as is apparently the case, humanity proposes to remain for an indefinite period on this planet. Indeed, one of the most useful tasks government now undertakes is to rescue such industries from the extractive group and place them securely in the genetic. This is done, not merely by negative measures like limitation of the size of trees or lobsters that may be taken for consumption, but also by positive research and by direct restocking. This policy provides one of the very few grounds upon which taxation may justifiably be used to limit consumption — as, for example, the over-rapid consumption of forests for newsprint — if other means fail.

The “extractive” industries proper have therefore a characteristic of their own — they deal with the exploitation of what is, for practical purposes, a fixed supply. Our coal, oil, iron, and the rest of the minerals, so far as we are concerned, are definitely exhaustible; and in some cases that fact has already entered practical politics. The United States Coal Commission, for instance, in 1923

warned the public that the anthracite deposits were one third exhausted, the supply waning, and the necessity for substitutes imminent. Ex-Secretary Fall created an international incident in the course of his insistence on the similar facts for oil.

§2. The prospect of exhaustion, however, is not a very terrifying bugaboo. Various imaginative writers have given us pictures of what our world will be like when its fuel supplies are used up; but we are not worried. They will last our time, we say; and that is true. No, the real problem is not exhaustion at some date in the future: it is increasing costs *now*, and next year, and the year after, indefinitely. That prospect, while less dramatic, is more disturbing. Why does it occur?

The simple and orthodox explanation, which remains true in principle no matter how much it has to be qualified in application, is this: In the use of natural resources, whether for mining or any other purpose, men naturally use first those that are readiest to hand. In the case of coal, they resort first to surface outcrops and strip workings, and, when excavation begins, use so far as they can the richest, biggest, and most accessible seams. They also tend to be rather extravagant in their operations. They turn to new workings rather than go to a deal of trouble to clear the coal thoroughly out of the old; and they are to some extent compelled to do this in a competitive system so long as there are any natural low-cost mines to compete with. A great deal of waste, much of it irretrievable, arises from this source.

But in time two tendencies become manifest, both working in the same direction and both arising from the same cause — the limitation of the sources of supply. *First*, as time passes the average effort involved in getting a ton of coal increases, because the easy sources of supply do not last forever, and resort must be had to deeper workings, poorer seams, and so on. So that even with the same rate of output as at the beginning, and no increase, the sheer passage of time tends to raise the cost. *Second*, if the output is to be not merely maintained but increased, owing to the growth in population or any other factor, then the resort to less favorable sources of supply will be hastened and there will be a reënforcement of the tendency to increasing costs arising, this time, from the increase of demand.

This increasing-costs tendency (called also the “law of diminishing returns”) is about as near to a physical law as we get in economics. It is at work all the time in extractive industries, even when its results do not show — an invisible antagonist. How is it combated?

§3. It is combated of course by technique. We are here watching the first phase in the many-sided struggle of skill versus scarcity; and, throughout the nineteenth century, we may safely say that skill was victorious. But notice what victory means in this connection: it means merely that the tendency for real costs to rise is checked, perhaps reversed, by the use of concentrated effort in the form of ideas and of tools. It does not mean that the conditions of the problem are altered,

double handicap; for it is the newer ones, if any, to which capital will freely flow, and the older can hardly expect to earn the same return on it with the same effort. Here again the relative position of Britain stands out sharply. Seventy-eight thousand British miners are in mines over a century old. The British seams are much thinner than the American, and their average depth below ground is about three times as great. For this reason machine methods of mining, which now apply to about 70 per cent of the American output, cover less than a quarter of the British. "Modernization" thus becomes doubly difficult where it is financially most urgent.

Yet the very triumphs of skill versus scarcity bring fresh problems. We have noticed how, in the development of the industry, its lateral expansion is likely to open up more coal, or at least "potential coal," than the present market is needing at present prices. There is thus an inherent tendency to overproduction. This tendency is reënforced by every advance in technique that depends on increased investment. For notwithstanding the general rule of increasing costs in the industry as a whole, for *any one mine* equipped with fixed capital the opposite tendency will be felt until the concern is being worked to its economic maximum. It pays to utilize the plant as fully as possible; for even though total labor costs may rise, the overhead charges do not vary with the amount produced, and therefore, by spreading them over a big output instead of a small one, the total costs per ton may be held stationary or even reduced.

And the larger the proportion of overhead costs, the more certainly this policy will be followed. We have therefore in both the extensive and the intensive development of the industry, under free private enterprise, forces making for over-equipment and overproduction.

But, remembering our market conditions, we ask, Where is all this output to be sold? There is an easy theoretical answer. If the low-cost fields have it all their own way (whether their low costs are due to natural advantages or to successful modernization), then under free competition the high-cost fields will be driven out of business, and production will shrink to salable dimensions. That sounds obvious, but it happens only to a very small extent. For both capital and labor in mining are extraordinarily "fixed"; once they are in the industry it is exceedingly difficult to get out again, and to get out intact under depression is almost impossible. For this reason, both owners and workers will make very heavy sacrifices rather than close down. In certain American fields, for example, the unions have consented to wage deductions to compensate for distance from markets or other adverse circumstances, in order to keep the men employed; and in England the owners have forced the retention of separate district settlements as a deliberate obstruction to the rational logic of the industry. But in the end such measures only enhance the ultimate penalty the industry has to pay. History shows us, in the most unmistakable terms, that there is no way whatever of avoiding the huge economic and social costs

that are entailed by our collective refusal to bring economic processes under the control of rational foresight.

§5. This lesson, however, was postponed for several years by certain extraneous circumstances in both America and England. In America, the first twenty years of this century witnessed a tremendous development of large-scale production and of transport, and with it an unprecedented increase in the use of coal. Population increased in that time 42 per cent, bituminous coal consumption 172 per cent. Toward the end of the period, when the reign of coal was already on the decline, came the war, which solved so many economic problems by the simple process of assuming an almost limitless demand and postponing the question of payment by the equally limitless use of government credit. But from 1920 the whirligig of time was bringing its revenges. The fighting fleets of the world had turned to oil, as had many of the commercial vessels and some of the railroads. Industry was discovering more efficient sources of power than the very inefficient (to be precise, 90 per cent inefficient) method of burning coal to boil water. To-day, to quote the National City Bank:—

Seventy-five per cent of the industrial power of the country is furnished by electricity, and while it is mainly generated from coal this has been done with steadily increasing efficiency. From 1919 to 1925 the reduction in the consumption of coal by central power stations, per kilowatt hour, was 39 per cent. The railroads account for approximately one fourth of the coal consumption of the

country, and their locomotive consumption per ton mile of freight carried has declined by about 21 per cent since 1920. Oil has been a larger competitive factor here than in Europe, and water power has been an increasing influence.

This has meant, not only a declining demand for mine output, but — in view of the advance in mining technique — an even more rapidly declining demand for mine labor. The resulting situation is thus vividly summed up by Isador Lubin: —

During the last thirty years the capital and labor engaged in the bituminous coal industry have been idle for an average of 93 working days in every year. Moreover, our mining capacity and labor force are much larger than any immediate possible maximum needs would justify. It is estimated that our annual bituminous capacity increased from 675,000,000 tons in 1915 to well above 800,000,000 tons in 1922. Our maximum combined consumption and exports, however, have never exceeded 579,000,000 tons. The labor force of the industry was increased during this period by over 100,000 men. To-day (1924) it is said we have over 200,000 more men than our production would justify.

What this means in industrial strife and social misery the annals of West Virginia and many another stricken area reveal. The shame and horror of the record forbid the term "civilization" alike to the system that causes and the society that permits it.

§6. In England this stage was for many years postponed by a policy which has now met its inevitable fate.

Increasing costs were counteracted only to a very small extent by improving technique; there was a more tempting way. If a demand could be discovered that would increase as rapidly and as steadily as the increase in costs, then all might yet be well and nothing very drastic need be done about it. For then the severity of competition would be mitigated; and as the English field was full, and the Atlantic wide, no fresh intruders could arise to disturb the domestic arrangement. The demand was, of course, discovered in the export trade; and, though reliance on the export trade meant in a most real sense that the country was living on its capital, that trade postponed for some years the ultimate collapse of the industry.

As in America, the war prolonged still further that postponement. But from 1920 onwards, the British industry had cause to know the truth of the saying that Britain had won the war and lost the peace. The reparations clauses of the peace treaty, signed in cold blood by David Lloyd George, compelled Germany to deliver annually to France, Belgium, and Italy more coal than Britain had ever sold them before the war. The economic chaos set up in Europe hastened the ruin of the export trade. Business depression emphasized the significance of high costs, and by the end of 1925 over 70 per cent of British coal was selling at a loss. Investigators of all political complexions agreed on the need for a complete reconstruction of the industry. Official estimates of the British Labor Party and the Miners' Federation

put the permanent surplus at from 200,000 to 250,000 men. What to do with these men has become a problem only second in importance to that of what to do with the surplus capital. Neither problem is solved; and in the failure of political determination conservative governments have subsidized the capitalists, and all governments the labor, at the expense of the community. The end is not yet.

§7. Now let us recapitulate. Here we have an industry in which positive contributions to economic welfare are matched by huge negative contributions to general welfare. The *laissez faire* theory that individual and social economic interests are identical has proved in this case both economically and historically unsound. The result, in both Britain and America, is a vast surplus of both capital and labor unable to escape elsewhere, and therefore involved in a pitiless struggle over the failing proceeds of their common effort — a struggle in which the general community is increasingly concerned and more and more involved. Can we discern the elements of a solution? Let us try.

First we may note a general principle on which opinion is now practically unanimous in both countries: the principle laid down by the United States Coal Commission of 1923 that coal “cannot continue to be treated as if it were not affected by a public interest.” That may not mean much while governments are unable to make up their minds as to how it should be “treated”; but at least it is something.

A second principle is also generally accepted, though by no means generally acted upon. In the words of the National City Bank of New York, "It is not in the public interest that coal miners shall receive less than a fair wage in comparison with wages in other industries, hazards and all factors considered."¹

Instructed opinion is moving more and more toward general acceptance of a third principle — namely, the principle of unification. It is admitted that individual operators are helpless as long as they remain in isolation, and that only through some sort of common plan for the industry as a whole can the problem of overdevelopment be solved.

The ideal solution, of course, is to suspend the "extra-marginal" fields that have no chance of low-cost operation, and to concentrate production, at its most efficient, on the most favorable sources, which could then give cheaper coal, better returns, and regular employment. As a theoretical solution, that is not seriously contested. The differences of opinion relate mainly to the methods by which this result is to be brought about.

Some people still rely upon competition. Here, for instance, is the point of view of the bank just quoted: —

The logical remedy for the coal situation would seem to be in having the price fall low enough to eliminate all but the number of mines required to supply the demand for coal, with a reasonable margin for expansion, and have so much

¹ In the two decades 1910–1929, United States coal mines killed an average of 2384 men per year.

of the working force as may be needed concentrated at these low-cost mines, with reasonably constant employment at good wages. This is the situation to which the industry tends under unrestricted competition. The process is severe, but is there any other way of getting to a sound basis?

Assuming for the moment that the eventual result would be the desirable state of affairs described (though history is hardly encouraging to that assumption), we must admit that the process is not only severe, but appallingly slow. It has been going on now since the war in as severe a form as anyone could wish, and we do not seem to be much nearer a solution. The costs of economic readjustment are not intolerable where there is considerable mobility of labor and capital; but where these exhibit a very high degree of inertia, the costs, both social and economic, tend to mount up to a point at which they become greater than society can afford.

There is, however, a further difficulty. Under free competition there is unfortunately no guarantee that it is genuinely the "fittest" who survive. "Among the strange conditions in the bituminous coal industry, the task essayed by the market of finding out the inefficient becomes a game of blindman's buff." Suppose we are put to the practical task of finding out which mines should survive and which should be "eliminated"; how should we decide? Obviously, we cannot take as our criterion the simple question of net profits. We shall find, for instance, that some mines are paying far lower rates to their labor than others, and labor forms a high

proportion of total costs. Ought we not to put them all on some common basis of labor payment before we start making comparisons?

§8. This is the issue that has caused three great strikes in England since the war. The British coal fields are divided into thirteen districts differing in productivity and in wage rates. During the war, under government control, flat-rate additions were made to wages, with the result that uniformity was approached. After the war the miners demanded that uniformity should be continued. They argued that it was unfair that two miners in adjoining fields working equally hard with equal living costs should get very different rates of wages. The owners argued that it was unfair that districts differing in their financial ability should have to pay the same rates of wages. Which side was right?

Evidently we need to have some idea of what wages are paid for. Are they paid, or should they be paid, for quantity of effort, or quantity of product, or quantity of financial value produced? We shall examine this matter in Chapter XIX. But we can say at once that whoever takes the coal industry — or any other industry — in hand will have to have at the outset some theory of wages in order to locate the uneconomic margin of the industry.

§9. A similar question arises with regard to the claims of capital. We might find two mines similarly placed in regard to productivity, nearness to market, wages, and so on; but if one of them is trying to pay interest and

dividends on a much greater total of securities issued than the other, it is probable that the first may go bankrupt while the second is getting along very nicely. We shall need, then, some way of determining what is a reasonable capitalization to accept in such cases; and if we find — as we shall find in almost any American industry — a large number of cases like that of the first mine, the question will become a very important one. We shall discuss this in Chapter X.

There is a very interesting aspect of the claims of capital that arises conspicuously in the extractive industries. Strictly speaking, a mine is a wasting asset. It may go on and on, but not forever; its physical productivity decreases, and when it stops there is an end of the business. The older it grows, the more difficult it is to maintain the equity behind the original capital — however that capital be computed; and if the capitalization be expanded beyond the original investment on the basis of demand or other factors affecting temporary earnings, the ultimate position of the concern will be so much more difficult. There is therefore a strong *a priori* case for caution, possibly for public regulation (as in Germany) of capitalization; and there is a strong case against the admission of any indefinite claims of capital, such as are represented by ordinary stock. Accordingly, the reform plans of labor groups, both in America and in Britain, involve an exchange of all such non-terminating claims for claims with a definite time limit (bonds or annuities) and the progressive amortization of these

claims. Now that might involve coercion; and coercion brings up the spectre in the background of all argument — the problem of property right.

§10. People who find this spectre rather terrifying (and that includes the governing majorities of England and America) are hoping therefore to get the coal industry rationalized by methods that rest upon sweet reasonableness rather than coercion. The favorite method is that of voluntary mergers. This has the official backing of the British government, and a good deal of powerful support in America. Secretary of Labor Davis, for example, in his annual report for 1927, wrote as follows:—

The present deplorable conditions in the bituminous coal-mining industry in this country, overdeveloped and overmanned as it is, unprofitable in the main part for most operators and furnishing but intermittent employment to the miners, could be improved by consolidation were it not for fear that indictments could lie under the anti-trust laws. . . . Only by this amalgamation of existing companies can the necessary central direction be effected, with output and employment stabilized, wages and prices steadied, and unprofitable workings closed. . . . It has seemed to me more than once during the past few years that the spirit and intent of anti-trust principles could have been retained, and yet that adjustments could have been made which would have relieved a tense industrial situation. . . . I believe the people at large are willing to have Congress remedy any existing laws that interfere with this necessary process.

On the other hand, the Federal Trade Commission, which exists (theoretically at least) to enforce the anti-trust laws, reports of the anthracite industry in its last investigation (1925): "In order that the present generation may have an adequate supply of anthracite at a reasonable price, more effective competition must be reestablished. Complete restoration of competition is not only practicable in the anthracite industry, in the opinion of this commission, but also is preferable to price regulation which has often been advocated." In this conflict of opinion it is hardly surprising that nothing has been accomplished in either direction.

It is important to notice that even with the method of voluntary mergers, the problems of labor policy and capitalization are not altogether evaded. There are always minority stockholders who may object to being "merged," or to the terms of a particular merger. This matter compelled a British conservative government, in legislation based on the voluntary principle (1926), to keep coercive powers available. Then there is (as in railway control) the matter of the high-cost concerns that nobody wants to absorb, whose position will grow more and more difficult as mergers proceed. And there is the very grave question of the wisdom, of safety, of encouraging private mergers without imposing on them any definite social accountability. This we shall discuss in Chapter X.

For all these reasons, a good many people have come to consider that the task of devising *and imposing* some

kind of plan on the coal industry must be undertaken by public authority. Among these people there are two main schools of thought. One school, represented by the British Labor Party, proposes to retain the old association of control with ownership, and convey power to public authority by a compulsory transfer of ownership rights. The slogan of this school is "nationalization"; but as it is sharply divided within its own ranks on the terms and methods by which existing ownership rights are to be got rid of, it has accomplished nothing. This we may call the method of radicalism.

The other method, usually associated with liberalism (though it is actually more radical in the strict sense of that term), proposes to effect a gradual divorce of control from ownership, endowing public authority with whatever control may be necessary and leaving to ownership whatever alimony it may turn out to deserve. This is admittedly an empirical and tentative method, not exclusive of the former as a last resort, and depending for success upon its being applied in time. So far as the British industry is concerned, there is grave reason to fear that the time is already too late. Democracies are apt to harbor the illusion that economic problems will be obliging enough to remain indefinitely suspended until public opinion has somehow meandered to a conclusion. Successive British governments, lacking the courage to give the positive leadership that all expert advice has enjoined for ten years, have blundered from

various kinds of subsidy to downright charity for the miners; and if revolution, as well as industrial bankruptcy, does not terminate the sorry story, it will be sheer and undeserved good luck.

VI

BUILDING THE HEAP: FOOD

§1. At the close of his last public lecture, a veteran British economist remarked to the present writer: "It's all very well, you know; but I ought really to have said to them, 'My dear people, the plain truth is there are too many of you.'"

It is impossible to discuss the genetic industries without raising the question whether we must concur in that melancholy verdict. Indeed, even if it were possible, it would be futile; what is the use of bothering about such tedious matters as economic principles without relation to the economic problems pressing for solution? And of all such problems the question of population and food supply is undoubtedly the gravest. Witness the struggle for Manchuria.

But perhaps we go too fast. Is there really a problem? Admitted that the English figure of 701 people to the square mile looks, on the face of it, very much like "too many," what about all the low-density areas of the world waiting to be filled up? Not all of them have raised the immigration bars as high as the United States, though most of them would like to if they dared. Surely there is room for spreading out yet? Surely the growing

realization that immigration is in fact, whatever it be in theory, an international and not a domestic matter will mitigate in time the circumstances of the high-pressure areas? Surely the governments will consent to international coöperation when they realize that war is the alternative, and in that way solve their local problems?

Then what about the well-established fact of the fall in the birth rates of advanced nations? Does not that offer a further mitigation of the prospect? And what about the possibilities of increase in the yield of lands already under cultivation? Even without guesswork as to the undisclosed resources of science in the future, look at the differences in yields of to-day. Here are figures that usually surprise English people who were brought up to think of America as "the granary of the world":—

AVERAGE CROP YIELDS PER ACRE 1915-1919 (BUSHELS)

	<i>Wheat</i>	<i>Barley</i>	<i>Potatoes</i>
United States	14.3	25 6	92.7
Great Britain	31.8	32.9	213.9

Is there not a suggestion here of enormous increase in the food output of the United States, as well as of those other low-pressure areas — Canada, Russia, Australia, the Argentine — whose present yields run even lower? Why worry, in face of such considerations, about the population pessimists with their dismal forebodings of "standing room only"?

Before we look into these arguments, it is only fair

to warn the reader that it was from its treatment of this very question that economics gained for itself the sobriquet of "the dismal science." People do not like to have their natural unreflective optimism punctuated by gloomy churchmen or skeptical rationalists. Least of all — as Professor E. A. Ross has pointed out — do they like to have so enjoyable a business as the exercise of their procreative impulses ringed round with cautions and question marks. Those impulses, from their direct association with the secret of life itself, have an aura that is peculiarly resistant to rationality. Faith in the beneficence of "natural" law lingers here strongest and longest, and is supported, not indeed by evidence, but by a very venerable tradition. Thus when the first overpopulation problem arises in the thirteenth chapter of Genesis, and Lot embarks on his unfortunate venture in colonization, Abram's benevolence (or is it his diplomacy?) is rewarded with the promise of "seed as the dust of the earth." Despite the rather obvious lesson contained in the situation itself, posterity has unhesitatingly regarded this as a blessing — notwithstanding that long before the Christian era his descendants were finding it rather a mixed one. So Luther, after paying lip service to the Pauline ethic on the subject, advocates marriage before twenty: "Then they should remain upright and serious, and let God provide the ways and means by which their children shall be nourished." It was a long time before humanity realized that this might involve passing on to the Deity rather more responsibility

than He was willing to accept on its behalf. The same faith lingers in such maxims as "For every mouth God sends a pair of hands," and perhaps (with some minor changes in the credo) inspires Fascist invectives against birth control.

There was some justification for it so long as each pair of hands that survived infancy (not a high proportion) was required for manual labor. But the predominance of brain in modern civilization is rendering the hands less of an asset, and the mouths more of a liability. Here the old faith makes its last stand in representing the decline in Western birth rates as providential. There is little doubt that Providence in this respect operates through human intention and intelligence; but the fall in birth rates is only half the story. The other half is the fall in death rates that modern knowledge has achieved. The significance of this result is well illustrated in the contrast Professor East makes between the figures for Britain and British India. Both had in 1914 the same survival rate, but India obtained it on a basis of 40 births and 30 deaths per thousand, England and Wales on a basis of 24-14; the difference meaning in India three and three-quarter million unnecessary births *and deaths*. Net increase rates obviously do not decline as fast as birth rates; thus in the United States we have birth and death rates per thousand of 29.5 and 14.4 in 1909, and 18.9 and 11.9 in 1929. And although the survival rate is declining, it must be remembered that this does not necessarily mean a decline in the actual

yearly addition to population because of the increasing base upon which the decreasing rate is reckoned. The annual increase for the United States was nearly as great at the end as at the beginning of the period just cited. J. M. Keynes, writing in 1923, pointed the moral for Britain: "Although the birth rate is materially lower than it was half a century ago, nevertheless the absolute number of daily births in Great Britain to-day is nearly double the number of deaths. Perhaps [he continues] we have already sacrificed too much to population. For is not the improvement in the average conditions of life during the past century very small in comparison with the extraordinary material progress of that period? Does it not seem that the greater part of man's achievements are already swallowed up in the support of mere numbers?" Ross is still more positive: "The larger part of the enormous gains from labor-saving machinery, the subdual of new lands, and the harnessing of the forces of nature have gone not to raise the plane of human life but to support more lives. . . . The fruits of any conceivable amount of applied science and technical advance can be absorbed without much betterment of human life if man is so foolish as to take out his marvelous good fortune chiefly in feeding endless millions."

§2. The fall in birth rates, whatever its causes, does not offer a "natural" solution of the problem. And neither does the prospect of increasing food supply. Let us revert for a moment to the crop-yield figures above

cited. They suggest an obvious question. If Britain can get an average of over thirty bushels per acre of wheat, why does not America do likewise? Is it because British soil is that much better? Only to a small extent, as far as natural facilities are concerned: British soil is better only because, on the whole, it has been made better. With similar exertion, America could in time raise her yield to the British level; but would it pay? Surely if British wheat gives twice as many bushels to the acre as American wheat, it ought to cost only half as much per bushel? But there is no "surely" about it, and physics denies that "ought"; we have ignored the cost in labor, skill, and fertilizer of the higher yield. British wheat will be half as costly as American wheat only if the British *cost* per acre is no higher than the American cost. If it is double the amount per acre, the unit cost will be the same; if more than double, the unit cost will be higher. And this was what Malthus had in mind when he propounded his gloomy thesis in 1798.

The gist of that famous thesis was that population increases in geometric, food in arithmetic, progression. Population goes, or tends to go, 2, 4, 8, 16, 32, and so on indefinitely; while food supply only goes 2, 3, 4, 5, 6. Which means, unless something is done about it, want and scarcity and famine and war for the later generations.

§3. Now it is almost a commonplace of economic history that, so far as prophecy was concerned, Malthus has

been wrong thus far. There were too many factors he did not foresee. He saw the English population increasing at about the rate he premised (doubling in twenty-five years), just as he might have seen the American population doing for the next half century; and he supposed mistakenly that that rate of increase could be taken as normal. But so far as potential increase was concerned, his thesis was justified. Population, at any rate, can go from 16 to 32 with no more difficulty than from 2 to 4; and food certainly cannot.

Then his ideas as to the future of the food supply were inadequate. He did not, and could not, foresee the revolution in genetic technique that the nineteenth century was to bring, and he could not foresee the development of modern transport. It has been calculated that whereas an acre of wheat cost over 61 man-hours in 1830, it cost less than 3 by the end of the century; though it must be added that that rate of progress did not continue, and can never be resumed. Experts assure us that we cannot look for further basic innovations in genetic technique that will make important additions to our supply without proportionate additions to unit cost. Or, to put the case in Malthusian terms, even if food supply can be expanded from 2 to 4, and perhaps from 4 to 8, it cannot go on expanding from 8 to 16, and 16 to 32, without prohibitive sacrifice. As Professor East points out, Belgium puts in about five times the man power to an acre that the United States does; but her yield is only twice, not five times, as great. "Japan

puts in over fifty times our labor per acre, and her yield tops ours by not over half again as much."

The generalization towards which Malthus was tending is in fact a valid one; and it is similar to that which we have encountered in the case of the mines. Men naturally use first the best sources of supply — the cleanest and richest lands among those that are easily accessible. They also tend to be rather extravagant in their operations, "mining the soil" and wasting a good deal of it so long as they are not compelled to be more careful. But in time two tendencies become manifest, both working in the same direction, both arising from the same cause — the limitation of the sources of supply. First, as time passes, the average effort involved in getting a bushel of grain increases; so that even with the same rate of output as at the beginning, and no increase, the sheer passage of time tends to raise the cost. This is because the reproductive elements in the soil become exhausted, and a diminishing return accrues to a given amount of effort. This fact is supposed to be one of the basic causes of the historic migrations of peoples. But among even the earliest settled peoples some way of coping with it is discovered — because otherwise they could not stay settled. The most familiar way is the old three-field system of manorial Europe, under which two crops were raised and one third of the land lay fallow — a very extravagant kind of economy, but better than none. By this system a limited population could be maintained at a stationary standard of living almost indefinitely; and

so long as the natural net increase was periodically wiped out by war, famine, or pestilence, the system served. It is usually overlooked in discussions of the modern population problem that a return to a static system offers at least a theoretic solution which may in the long run materialize whether we will or no. With modern technique and a deliberate limitation of births to the replacement level, a fairly populous society could maintain itself in reasonable comfort, *though not of course at an indefinitely rising standard of living*, or with the range and instability of economic wants that we have come to regard, very unwisely, as axiomatic.

It is the second tendency — the dynamic phase of the first — that occasions most of our problems. If the output is to be not merely maintained, but increased, owing to the growth of population or any other factor, then the resort to less favorable sources of supply will be hastened and there will be a reënforcement of the tendency to increasing costs arising, this time, from the increase of demand. The expansion of the margin of supply will proceed in two directions, extensive and intensive, each involving an increased unit cost. The output of existing lands will tend to be increased; and poorer or remoter lands will have to be brought into cultivation.

The last war furnished in both England and America a conspicuous illustration of the extension of the margin for arable cultivation under the stimulus of a sudden increase of demand. The rising prices of produce, backed

by government guarantees, made possible the breaking-in of new lands and the continuance of high-cost crop raising, so long as the guaranteed prices were maintained. Under this stimulus American wheat acreage expanded by 1919 to over 50 per cent above the pre-war area. Just the same thing had happened in England during the Napoleonic Wars; and when the war period was over and the seas were open again, the same difficulties occurred. But apart from such temporary fluctuations, in the world as a whole the trend steadily persists: increasing demand, extension of the margin of cultivation, higher costs; and statisticians deny us the hope of defeating this last phase if our present rate of increase continues. The contest of skill versus scarcity thus reappears; and, as in the case of the minerals, we may say that, while skill was triumphant during the nineteenth century, the issue is now in serious doubt.

§4. In Britain the tactics of skill followed a double form. In face of an unprecedented increase of population (from about 9,000,000 to 32,500,000 in the hundred years), two lines of assault were taken, one corresponding roughly to the former, the other to the latter half of the century. There was a revolution in genetic technique no whit less important than the revolution in industrial technique; there was also the second of the main factors Malthus failed to foresee — the development of cheap long-distance transportation.

About the middle of the century England definitely gave up the idea of self-maintenance and adopted a

free-trade policy. Realizing the advantage of her lead in the industrial revolution, she saw that it would pay her to develop those pursuits that showed an *increasing* return to effort, and with their products buy her food and raw materials from newer lands that were not yet threatened with decreasing returns to agriculture. In this way she could stave off the rise in food costs that her increasing population would otherwise have made inevitable. The policy had tremendous political as well as economic consequences; but, in the nature of the case, its efficacy as a solution of the problem was bound some day to decline. That day has come.

§5. Since the war the position has been far graver by reason of the fact that the United States is now definitely committed to the same policy. It was this fact that we noted in Chapter IV as one of the characteristics of an "old country." Year by year the United States is exporting — just as England did — an increasing proportion of manufactures; and importing — just as England did — an increasing proportion of food and raw materials.

UNITED STATES IMPORT					UNITED STATES EXPORT				
<i>Raw Materials and Crude Foodstuffs</i>					<i>Manufactured and Semi-Manufactured Goods</i>				
1880	20	per	cent	of total	15	per	cent	of total	
1900	38	"	"	"	35	"	"	"	"
1910-1914	47.2	"	"	"	46.7	"	"	"	"
1921-1925	48.5	"	"	"	48.7	"	"	"	"
1927	50.4	"	"	"	56.3	"	"	"	"

Since the war the proportion of American exports going to the comparatively undeveloped regions of the world — South America, Asia, Australasia — has doubled its pre-war magnitude, while the share of Europe has fallen from 62.3 to 45 per cent (1929). Euro-American exports are becoming less and less complementary and more and more competitive. Already in the three pre-war years the American export of food averaged fifty thousand tons less than the import. The pressure of demand on the still young areas of the world is increasing at ominous speed.

Now those areas are not infinite; and their populations also are increasing. Australia and Canada, according to Professor East, will probably cease to be food-exporting nations in less than a generation. The teeming Orient is restless with the desire for a higher standard of living, and is turning, against its immemorial instincts, to dynamic industrialism as the West has done. "Within half a century presumably, within a century certainly, each country must prepare to live upon the fruits of its own agricultural efforts. . . . Those who cherish the hope of a sudden extension of the allowance Mother Nature grants her children when this time comes are likely to be disappointed. There is no indication, either of physics, chemistry, or the natural sciences, of agriculture being able to profit by such radical changes as have occurred in mechanics." "The limits of human expansion," says the Australian Commonwealth stat-

istician, Sir George Knibbs, "are much nearer than popular opinion imagines; the difficulty of future food supply will soon be of the gravest character; the exhaustion of the forces of energy necessary for any notable increase of population or advance in the standard of living, or both combined, is perilously near." At the present rate of increase the world's population will double in sixty years; while there is not the slightest reason for believing that the food supply can be doubled without *much more* than doubling its total cost. In other words, the outlook is a general fall in the standard of living, in which, as we said in Chapter IV, the industrial worker will have to give more hours of his labor to buy a given quantity of food and clothing. For, just as in the case of the minerals, it is not exhaustion of supplies in some hypothetical future that is the real peril, but rising real prices now, and next year, and the year after, indefinitely.

§6. This prospect has given rise to an active propaganda for the deliberate and artificial restriction of births, more especially among the poorer classes; for — as is well known — it is among these classes that birth rates run highest. Death rates also, especially of infants, run highest here; but the net increase remains greater than that of classes higher up the economic or social scale. It will probably always so remain. The question arises, however, Are these people poor because they have so many children, or do they have so many children because they are poor? Early economists (especially Ricardo and J. S. Mill) took the former posi-

tion, and asserted that any deliberate raising of their standard of living would be counteracted by increased breeding. The facts have not borne out this assumption. The second position, paradoxical as it appears, has much to support it—the congested living conditions of the very poor, their low cultural and educational level, the fact that in unskilled work maximum earning capacity is reached early in life, and so on. On the strength of such considerations, the Catholic Church takes the stand, Look after the standard of living and the birth rate will take care of itself. As to how it will do so there is active and interminable argument. As economists, we are not concerned with the ethical and sociological issues involved; but on the basis of a world perspective we are entitled to maintain two general propositions:—

The first, that advanced nations gravely err in any policy that subsidizes manufacture at the expense of agriculture, seeing that the traditional exchange of old-country manufactures for new-country produce offers no permanent solution.

The second, that the bringing of additional lives into the world must be regarded, not as an unavoidable accident of human relations, nor as the inviolable act of a Providence beyond human foresight, but as a high privilege justifiable only in the light of responsibility to society as a whole. Upon this conclusion the dictates not only of economics, but of ethics, humanity, and religion itself, converge.

§7. At this point, however, the intelligent reader will

be impatient to enter a caveat. Despite all our gloomy predictions, prices are not rising! On the contrary, they have fallen, for nearly all crops, to amazingly low levels! American wheat, this summer of 1931, touched at Liverpool the lowest level of three and a half centuries. Cotton prices, on the basis of the largest American supply (including accumulated surplus) ever known, are unlikely to cover the growers' expenses. So it is with wheat. Rubber has defied all the efforts of the British government to influence its selling value, as has wheat those of the American government. In Brazil they are using coffee for fuel. Sugar is hardly better off. The collapse of basic agricultural prices is at the moment a far more urgent problem than any long-time prospect of population pressure. What is the explanation of this paradox?

The explanation is not simple, nor is it entirely economic. Some phases of it are economic; they concern the general difficulty of relating supply to demand (by demand we mean not only willingness, but financial ability, to purchase). This matter we must now briefly examine.

§8. First, let us unite in blaming the weather; though in the present connection it is the good weather we must blame. Short-term variations in the size of crops are due much more to changes in yield per acre than to changes in total acreage; and yield is mainly a matter of weather. This is especially true of wheat, corn, and cotton.

§9. But the current surpluses are much greater than yield variations would account for. We must bring in now, just as we had to in mining, the great inertia of labor and capital in agriculture. It is not quite as great as in mining; but it is great enough to make adjustments of acreage to fluctuations of demand difficult. There is a psychological as well as a physical factor involved here; and there is an institutional factor also — namely, the fact that the credit machinery of America is so arranged as to make expansion in good times infinitely easier than contraction in bad times. These things may be briefly illustrated.

Here is the psychological factor at work, described by Dean Russell of Wisconsin in October 1928: "The improbability of controlling crop production by any concerted means on the 6,000,000 farms of America is so great that no one has yet been wise enough to work out a satisfactory plan. . . . The government tried to impress caution on the potato growers this spring (following a good year). In spite of direct warning, the national increase in acreage was nearly 350,000 acres. The American potato grower now finds himself smothered with a prospective crop estimated at over 466,000,000 bushels. The market is opening at not enough to cover costs of production. Probable total value of this enormous crop will be \$100,000,000 less than if there had been an unfavorable season in which 50,000,000 bushels less had been grown." Similar stories can be told of wheat and cotton. How far is the individual to blame?

As an individual he is helpless. How much is it going to cost him (and the nation) to learn the limits of individualism?

§10. Noting the psychological factor, let us take an illustration of other factors from wheat history. Our illustration goes back to 1918, when the United States government, in order to expand the food supply, guaranteed the high price of two dollars a bushel. Apparently the government thought the war was going on forever, since it neglected to make any corresponding provision for contraction. Instead, conditions of artificially easy credit encouraged farmers to increase their land holdings on borrowed money. Owing to the starvation in Europe, prices held up for some months after the guarantee was withdrawn. Then several things happened. A drastic credit deflation in Japan, America, and England diminished the amount of purchasing power available. The seas were opened, and both Canadian and Argentine grain were able to reach Liverpool at lower prices than the American. Europe, economically bankrupt, was no longer able to buy and dared no longer borrow; on the contrary, she was required to pay. To make it easier for her, America raised the highest tariff wall in history. Twenty-eight European nations began to follow suit. The manufacturing ones, half-starved as they were, had difficulty in selling their goods and therefore in buying food from the agricultural ones. Surpluses began to accumulate. Russia, lacking shoes and soap and cotton cloth as well as machinery, was denied access to the reserves of pur-

chasing power in Paris and New York. Desperate, she began to force the wheat her own millions needed into the glutted markets of the world. Austria, once more bankrupt, dragged down Germany and England in her financial ruin. American business and industry found their tariff wall unable to keep out the world depression. In the cities, seven million men and their families were short of food, and some died of starvation. On the farms, wheat and corn were fed to cattle and swine.

Several of the governments whose achievements are briefly indicated above have tried their hands at this problem of agricultural surpluses. The British government, for example, tried for some years to maintain a profitable price for rubber by legal restrictions on its export from British plantations. These had some effect on production itself; but the attempt ended in failure because the British had no means of influencing the production of estates falling under the political jurisdiction of other nations. The League of Nations, in 1931, inaugurated several attempts to reconcile the economic needs of Central European states. The attempts failed owing to conflicting national policies. The American government, in 1929, saw fit to use public funds for a gigantic speculation on the course of prices by buying wheat off the market in the hope of holding the price to an arbitrary level — without taking any control whatever over production. The attempt, at its abandonment in 1931, had cost the taxpayers well over one hundred million dollars.

It is therefore not surprising that present efforts at ad-

justment of supply to demand are proceeding mainly under private auspices; for it is now beginning to be realized that all such attempts must be international in their scope, and must deal directly with production, not merely with marketing or with price levels. But behind these attempts rises the larger problem: the liberation of trade, with its consequence, the equalization of world purchasing power. *It is the lack of any solution to this problem which has produced the illusion of cheapness and plenty in a world full of poverty and privation.*

When economists and sociologists project the population problem into the future, they think in terms of nature and human need. They assume that need is not arbitrarily stifled through lack of purchasing power, that production and trade are not arbitrarily handicapped by political passions. And *even at that*, they discern grave difficulties within two generations. But if their assumptions prove too optimistic, those difficulties will come upon us all the sooner — will come, in fact, with pitiless inevitability before humanity has had the time, even if it possessed the will, to set about their solution.

VII

BUILDING THE HEAP: MANUFACTURE

§1. We turn now from the getting of material to the using of material. It is on this page of the record that the Western nations, the Anglo-Saxon peoples in particular, like to dwell, for it contains the story of their proudest triumphs. It is the story of Power — of the discovery and application of non-human sources of energy. It begins with water power, much earlier than the period of the so-called “industrial revolution”; it carries us through the steam age to the internal-combustion engine; forward into the electric age that is now nearing its zenith; and beyond that, toward still other innovations whose nature can as yet be but dimly imagined.

§2. The first step in this victorious advance of skill versus scarcity — a step taken to some degree by every settled society — is the principle of specialization. The leather worker and the cloth worker and the rest of the crafts long ago, in western Europe, discovered the advantage of sticking to one trade. Obviously there will be a bigger output of both shoes and cloth for a given number of hours of labor if, instead of each family making its own, the leather worker makes all the shoes and

the cloth worker all the cloth. (There may be disadvantages, too, but we will ignore them for the moment.) There will be a quicker development of expertness and technique under this system; and the chances of invention — which is mainly a cumulative process — will be much improved. There will be an economy of time and effort saved in eliminating the need to switch constantly from one kind of job to another. There will be a socialization of productive experience. And we may also reasonably expect a more accurate adjustment of jobs to people, again making for efficiency. For although the shoemaker can make cloth and the cloth maker shoes, each will tend to settle on the work for which he has the greatest aptitude. This will be true, oddly enough, even where the shoemaker can make not only shoes, but cloth also, better than the cloth maker — so long as he has a greater comparative advantage in one line than in the other; just as a lawyer might conceivably be a better typist than his secretary, but still find it paid him to retain her services. This fact, when it is applied to national policy, becomes the foundation of that system of international specialization and co-operation that we know as free trade.

§3. Next, along with increasing specialization, comes the great evolution of the tool; and with it the central dilemma of industrial society. The advent of power calls for tools more elaborate and costly than the individual worker can provide. In the handicraft days this was not so; and we can trace in the story of the crafts

the complete emergence of this dilemma. We see the textile workers originally spinning on their own wheels, and weaving on their own looms — as we can see them still, for example, in Burma. In this stage what they sell is essentially a surplus; their entire livelihood does not depend upon it. But when the main purpose becomes commercial, their independence diminishes. We find them working upon material which is supplied to them by the merchant in its raw state and returned processed. And soon the more costly tools pass beyond their ownership — the merchant owns, for example, the harness of the looms; presently he owns the looms themselves, though they stand in the workers' premises. Then power is applied to the looms, and that compels their concentration in a place which is also provided by the master. The workers have become "hired labor" going empty-handed to the machine. Many trades have passed this way into the domain of power; others are still passing.

§4. Now when this stage is reached we encounter a factor working in precisely the opposite sense to that which we encountered in the extractive and genetic industries. In those cases we discovered a tendency toward *increasing* unit costs (diminishing returns). In the case of machine production we have a far more certain and powerful tendency toward *decreasing* unit costs (increasing returns). If we separate, as we did before, the factors of time and of demand, we find that in machine production, provided a sufficient amount of

the receipts is regularly set aside for maintenance and for replacement of the equipment as it wears out (depreciation allowance), there is no reason why the sheer passage of time should increase the costs. And if demand, or quantity demanded, increases, — owing to increase of population or any other factor, — then there is a strong tendency toward decreasing costs. How does this tendency arise?

§5. It arises in two ways. *First*, with a given equipment of buildings, machines, and so on, the more fully that equipment is used, the less will be the share of running it which any one unit of goods will have to bear; so that even if we assume the cost of human labor to vary directly with the size of the output (which it does not, as a rule), the total costs will not do so. The larger the equipment, the more total costs will lag behind total output. So production will tend to expand until the machines are being “worked to capacity.”

It is important to notice here that people who enter this sort of production have to look a good way ahead in deciding how big their equipment should be. And in estimating future requirements of their plant, they are usually (especially in America) optimistic. This means that there is always a tendency toward expansion — which takes the form of stimulating demand — until all plants are working at a maximum: a condition seldom reached and still more seldom maintained.

§6. But there is a *second* influence powerfully at work. Practically all concerns that have entered factory pro-

absence of the other. There are a good many industries of the handicraft type still in existence to which the second condition might apply, but the first does not. On the other hand, there have been instances where power production has been applied on a large scale to a commodity for which the demand did not respond; with the result that plants have fallen idle and investors have lost their money. Risks of that sort have frequently to be taken, and the losses consequent on mistaken estimating are likely to be very heavy.

§7. The automobile industry fulfilled both the above conditions almost ideally. Here in a nutshell is the story of its rise:—

YEAR	NUMBER OF ESTABLISHMENTS	TOTAL NUMBER OF CARS PRODUCED	OUTPUT IN CARS PER WAGE EARNER
1899	57	3,723	1.66
1904	178	21,692	1.80
1909	265	126,570	2.47
1914	300	568,781	7.17
1919	315	1,888,059	8.97
1921	385	1,602,336	11.15

Notice how small is the increase in the number of establishments compared to the increase in the cars produced. Each producing unit has enormously expanded its scale of operations, and the increase in the workers' yearly output is the consequence of this colossal growth of equipment; which in turn was dependent on the continued willingness of the public to buy increasing quantities of the product at falling prices.

It is interesting to see this same process at work in

American manufactures taken as a whole. In this case we have to express the total product in money values, since we cannot add together motor cars and chewing gum and underclothes and all the rest. And as price levels have altered a good deal since 1899, the values have been reduced in the last column to the 1899 level by using a price index (Dun's). Even when this has been done, the increase in product is much greater than the increase in the labor force. It is also greater than the increase in capital employed.

YEAR	NUMBER OF ESTAB- LISHMENTS	NUMBER OF WAGE EARNERS	ANNUAL VALUE OF PRODUCTS (MILLION DOLLARS)	
			<i>Current Values</i>	<i>1899 Dollars</i>
1899	207,514	4,712,763	11,407	11,407
1919	290,105	9,096,372	62,418	22,764
1927	190,917	8,341,560	62,225	28,583

It will be seen that there is an absolute decline in the number of separate establishments, which has taken place, along with a sharp drop in the number of employees, in the years of greatest prosperity; while the increase in value output during that period has gone on unchecked. A process of rapid concentration has been in force, accompanied by the elimination or absorption of the weaker concerns. Both tendencies may be expected to continue, probably to intensify.

§8. The thoughtful reader may notice a rather startling problem revealed by these figures. What has happened to the 750,000 workers who have disappeared from the mills and factories since 1919? Let us merely

note the problem, leaving their fate a mystery for the present (to some extent it will remain a mystery at the end of the volume), and continue the story of increasing returns.

The figures for total wage earners and total value really understate the tremendous gain in productivity. We must allow for the shortening of the average working day since 1899 by over 15 per cent, taking all branches of industry together; in manufacture alone, weekly working time has been curtailed by over 11 per cent since 1909. A more accurate method of showing the real advance is therefore to take a man-hour basis; and the use of physical-output figures eliminates pricing difficulties. Here are a few specimen cases:—

1927 INDEX OF OUTPUT PER MAN-HOUR (1914 = 100)

Rubber tires	392
Automobiles	278
Petroleum refining	182
Flour milling	159
Iron and steel	155
Cement	154
Leather tanning	141
Paper and pulp	140
Cane-sugar refining	133
Slaughtering and meat packing	126
Boots and shoes	124

During the first quarter of this century, according to the official statistics covering manufacture, mining, agriculture, and transport, there was a gain in production per worker of about 80 per cent. It is a wonderful record. Incidentally, it raises another problem, which it will

be well to note at this point. Production per worker, the figures say, has risen 80 per cent; have real wages—that is, wages measured not merely in money, but in money's worth—risen correspondingly? Obviously they *might* have done so without interfering with the relative distribution of the proceeds of industry between labor, management, and ownership; but have they? Ought they to have done so? Does the worker have to work that much harder now? What are wages really paid for? The question begins to have a familiar sound; it is part of the general problem of "distribution" (why are the shares what they are?) that is lying in wait for us farther on the road. But we are not yet done with the story of increasing returns.

§9. Since we are dealing with the most dynamic element in our economic life, we need not be surprised to find that, in the absence of rational control, it has in certain directions notoriously overshot the mark. "We are industrially a young, powerful people," said Secretary of Labor Davis in 1925. "We do things, and sometimes we overdo things." After speaking of the overdevelopment of the coal industry, he turned to manufacture. "With our present iron and steel equipment we can produce in seven months our needs for a year. Our window-glass factories in seventeen weeks can supply all that we can consume in twelve months. Fourteen per cent of our 1542 boot and shoe factories, working full capacity and full time, can produce all the shoes required in the country." Other experts have

detected other cases. Lumber mills, for instance, appear to have developed about three times as much capacity as is needed to handle the annual cut. Sugar refineries could take care of double the annual consumption. So could copper and zinc smelters. The further we look the more cases of this sort we find. And if the efficiency people had a free hand, the number would be still greater. Mr. Ethelbert Stewart, United States Commissioner of Labor Statistics, has given us some striking illustrations. "We have sawmills where the output per one-man hour is 15 board feet, and we have sawmills in which the output per one-man hour is 323 board feet. If all the sawmills of the United States were as efficient as the average sawmills now in existence, it would require less than one half the present number of men employed in the industry to produce the total output; while if the highest efficiency, 323 board feet per one-man hour, obtained in all the plants, practically 45,000 men could do the work now being done by 292,000 men. . . . Here in Chicago a brick machine shoots out 49,000 bricks per hour, and if all the brick plants of the United States were as efficient as the best brickyards in Chicago, the industry could release 80 per cent of its employees to be utilized by other industries. . . . Most of the brickmaking plants in the United States to-day are using precisely the same method as that used in Egypt with the Hebrew slave labor at the time Moses led the great brickyard strike." And there are plenty more cases.

It is evident that the rush for increasing returns through large-scale production has run into some pretty bad ground. In some lines — automobiles, for instance — the limits of production economy have been widely realized. But in many others there is plenty of scope for further technical economy *if only it could be attained*. Its attainment is barred by two unsolved problems. There is the prospective displacement of labor — though this is hardly a problem for the manufacturer so long as he is allowed to discharge men at will and leave to the rest of us the question of what is to happen to them. There is the problem of selling the goods — and this is now the most urgent problem he has to face.

§10. Accordingly, we find that in the last decade the quest for increasing returns (decreasing unit costs) has been diverted more and more from production to merchandising. The development of chain stores is the most familiar example of it; and the incentive at work is sufficiently illustrated by the fact that total expenses accruing between the producer and the final consumer run about one third to one half lower in the case of chains than in independent stores of average size. This enables the chains to operate on a very low percentage net income reckoned on gross sales. It is due to economies in buying (or producing) in bulk, standardization of equipment, rapidity in handling and turnover, and highly centralized administration. Chain stores have shown in the past decade striking increases in number as well as in their proportion of retail trade. A 1926

census of eleven typical cities showed them, even at that date, doing 73 per cent of the gasoline business, 70 per cent of the variety trade, 30 per cent of the drug trade, 51 per cent of the shoe and men's hat business, 35 per cent of the cigar and 41 per cent of the grocery and delicatessen lines. Some of the chains were started by producing concerns seeking further outlets, others as distributing concerns which have since reached back into production.

Even more striking movements have gone on in the region of wholesale merchandising. We have, for example, such colossal unitary systems as that of the Postum interests (General Foods, Inc.), which includes Maxwell House Coffee, Calumet Baking Powder, Log Cabin Syrup, Jello, Swansdown Cake Flour, Minute Tapioca, La France, Hellmann's Mayonnaise, Walter Baker's Cocoa, Franklin Baker's Cocoanut, and other leading brands. Similar systems of recent growth exist in many other fields. But concerns of this sort make us realize that it is time to stop and consider our position. For in this story of the quest for increasing returns something very significant has been happening which we, like the nation, have been much too busy to notice. It is time to notice it now.

VIII

THE HIGHER STRATEGY OF POWER PRODUCTION

§1. During the first twenty years of this century the average capital employed in American manufacturing establishments more than trebled. Figures for subsequent years are not available, but the continued growth in the size of the producing unit is clearly seen in the increase of average horse power by more than 50 per cent. This means an enormous increase in the *average financial stake involved* in productive industry. The economic and social consequences of this fact must now be considered.

It needs no argument to show that as the financial stake increases, the question of security (in the ordinary, not the financial meaning of the term) becomes more and more important. Let us look, then, at some of the ways in which industry attempts to ensure security for its expanding stake in production.

§2. Around the year 1915 a company whose main business was the making of adding machines established contact with certain gentlemen interested in the manufacture of mechanical pencils. Under the guidance of these gentlemen the manufacture of pencils expanded

far more rapidly than the manufacture of the adding machines, and in 1917 the Eversharp Pencil Company took over the entire concern and began to work toward the ideal of producing mechanical pencils by the continuous process method, with the aid of elaborate and specially devised machinery. The market was developed through one of the most successful and scientific advertising campaigns on record; and this development of demand made it possible within a comparatively few years to reach an output of over 35,000 a day. Before this point was reached, however, difficulties had developed in regard to the supply of raw materials. The company had been buying graphite from makers of wooden pencils; and it encountered a certain inability, or perhaps unwillingness, to increase the supply as rapidly as the success of the enterprise demanded. "We discovered that it is not sound business, other things being equal, to leave the control of a portion of your raw-material sources in the hands of a concern that may in any way be considered your competitor." The making of graphite is a difficult and delicate process, and the Eversharp Pencil Company went through a troublesome period of experimentation; but the eventual result was not only security for its expanding production, but a highly specialized product, admirably adapted to its own purposes.

We have here one example, among hundreds that might be quoted, of an expanding business reaching down toward control of its raw-material supplies and

gaining thereby both security and technical advantages. The process is known as *vertical integration* and is perhaps seen at its best in the metal industries. Here is a very famous case from the latter field. The English shipbuilding concern known as John Brown and Company started in the middle of last century with the production of steel. It acquired the Bessemer patent, and, with the expanding market offered by the dawn of the steel age, embarked on a farsighted policy of acquiring iron mines in England and Spain, collieries, limestone quarries, and other raw-material supplies. The manufacture of its own iron not only eliminated the expenses and uncertainties of dealing through middlemen, but brought with it the possibilities of specialization and continuous process manufacture. In proportion, however, as the financial stake expanded, the importance of a secure market increased. John Brown and Company began to look forward as well as backward in the economic landscape. Their principal output at this stage was plate and marine forgings, heavy castings, and so on, and their principal customer was the Clydebank Engineering and Shipbuilding Company. To the Clydebank concern it was as important to have a reliable supply of materials as it was to John Brown and Company to have a steady outlet for their products. The natural result was a merger in 1899. But even yet the integrating process was incomplete. The most important product of the concern was the battleship; and battleships are armed. Accordingly the concern acquired

control of the great armament firm of Firth in Sheffield, in 1902. It has since entered into close alliances with other producers of ordnance and marine engines and is now able, with its associates and subsidiaries, to turn out a fully equipped modern battleship without once going outside its own organization.

Here we have the vertical process carried both backward towards raw materials and forward to the finished product. Other cases, such as the United States Steel Corporation, are well known, and in many instances include the financial as well as the economic entities necessary to the working of the system, and also agencies concerned in the distribution of the product.

§3. In cases of this sort, vertical integration is possible because of the bulk demand for supplies. But there are other cases, of which the textile industry is the most typical, where the demand is for a much wider variety of materials in smaller quantities. These cases generally follow the line of *horizontal integration* — that is, the coming together of several concerns on the same plane of production in order to pool their individual demands for supplies. The same principle is at work in the formation of buying associations among independent grocery stores; and it was the same idea that encouraged Louis Liggett, in 1902, to found the United Drug Company for the supply of a drug-store chain. In this instance we have a characteristic example of action and reaction; for the success of a manufacturing policy

based on well-advertised proprietary goods, leading in turn to the desire for a wider distributing machine, was a powerful factor in the extension of the system of retail stores.

§4. Security may be threatened, however, and advantages may be gained, not only on the side of supply, but on the side of demand. The efforts of producers to strengthen their position in regard to production are therefore only half the story. The other half concerns their efforts to remove the uncertainties and enlarge the possibilities of demand. Everyone knows that the development of large-scale production of consumers' goods has been accompanied by a tremendous growth in advertising. Advertising is used not only to stimulate new sales, but to maintain demand at a steady level and, so far as possible, to counteract the spontaneous impulses of the consumer with their element of unpredictability. Concerns, however, which do not appeal so immediately to the final consumer as do manufactories of tooth paste, chewing gum, and cigarettes, adopt other ways of dealing with the demand situation. In the case of armament firms it has sometimes happened that these other ways are far less innocuous than those with which the average housewife is acquainted, though they belong to the sphere of politics rather than of economics. For industry as a whole it is probably true that within the last twenty years far more ingenuity has been expended and more capital invested in attempts to control the

market than in attempts to strengthen the technique of production; and there are certain inherent reasons why this should be so.

§5. If we follow through the logic of competition applied to industries of increasing returns, we find that the number of competitors tends to diminish, while their size tends to increase. We find, too, that as this process goes on it becomes more and more difficult for new concerns to enter the competitive field. This is partly because of the huge initial investment a would-be competitor must attract in order to have any chance of the low-cost production which is already attained by the successful enterprises. It is also partly on account of the fact that the risks faced by a newcomer necessarily increase as the average scale of production grows larger. And it is also true, in certain cases, that the financial agencies whose help a newcomer must invoke are too deeply interested in the existing concerns to give him facilities for entering the field. Thus, as Marx foresaw, the natural logic of increasing returns limits the area of active competition.

Now when this stage is reached, two results are about equally likely. One is that such competition as survives may become a battle of giant corporations, in which the older methods of competition are about as relevant as would be the rules of chivalry applied in modern war. The other is that with this prospect in view, or after a short experience of it, the comparatively small number of dominant concerns realize the futility of competition

as compared with the advantages of coöperation; and we then find ourselves in an age of giant mergers whose primary purpose is an avoidance of competition, and what is euphemistically called the "stabilization" of demand.

§6. It is this development which has excited the attention of politicians and consumers generally in all Western countries, for it entails a concentration of control over economic life on a scale which is only just beginning to be realized. A recent study indicates that the 200 largest corporations in the United States receive nearly 40 per cent of the total corporate income of the country and control over 45 per cent of all non-financial corporate wealth. The rate of growth of these largest corporations is far greater than that of all others; and seeing that their total boards of directors number less than 2000 men, of whom an important number are inactive, we may conclude that "the ultimate control of nearly half of industry is in the hands of a few hundred men."

This is a state of affairs so different from that contemplated by individualist economics that a quite different kind of economics is required to deal with it. That kind of economics is as yet only in the making, and its problems are only just beginning to be formulated. Public opinion also has vacillated, and the development of law as well as of theory exhibits in marked degree the phenomenon of "cultural lag" which we noticed in Chapter III.

§7. When the American public first realized the nature of corporate endeavors to limit competition, its natural response was an attempt to reimpose competition by force of law. The American states had inherited from both English and French theory a cordial distrust of monopolies, which several of them had written into their constitutions; and by 1890 eight of the states had also enacted laws against "trusts." The problem, however, was even at that date mainly an interstate one, largely concerning the utilities; and in 1890 Congress enacted the Sherman Act forbidding "every contract, combination, or conspiracy in restraint of trade." The Senators who sponsored this law conceived of themselves as merely enacting by statute accepted principles of English common law, and they appear to have had no doubt that abolishing restraint of trade was the same thing as restoring fair competition. The interpretation of the act by the Supreme Court disabused them upon both points. For example, a railroad case in 1892 dealt with an agreement among eighteen competing railroads as to freight rates in a given territory. The roads had realized that competition of overdeveloped units pushed to the extreme might result in ruin for all of them and loss to the public. But where at common law the reasonableness of their action would have been an admissible defense, the Sherman Act said "*every* contract," and the railroads were found guilty. It was not until the Standard Oil case of 1911 that the Supreme Court admitted "the rule of reason" in a highly

ingenious argument designed to show that it had not changed its mind.

But more urgent difficulties concerned the means by which control over the market was attained. Such devices as voting trusts, holding companies, interlocking directorates, and communities of interest were not illegal in themselves and might in certain cases prove highly desirable instruments of economic policy. It became increasingly necessary, therefore, to legislate according to purpose or effect, and the Clayton Act (1914) accordingly condemns such devices "where the effect may be to substantially lessen competition or tend to create a monopoly."

But even this was not enough. In condemning concerns of the magnitude of the Standard Oil combine or the Tobacco trust (1911), with their hundreds of millions of securities outstanding, the courts had to deal somehow or other with the question of what should be done about them. The task of indicating a desirable set-up in place of the one condemned could not altogether be avoided, and in so doing the interests of the public had to be preserved. To deal with these and similar difficulties administrative supervision was needed to supplement judicial action; and the result was the establishment of the Federal Trade Commission (1914) "to make investigation of the manner in which the (court) decree has been or is being carried out . . . to investigate and make recommendations for the readjustment of the business of any corporation alleged to be

violating the anti-trust acts," and "to *prevent* persons, partnerships or corporations . . . from using unfair methods of competition." It is the business of the Commission, in respect to this last clause, to initiate proceedings when it considers that such proceedings would be in the public interest.

§8. Now this clause (Section V of the Trade Commission Act) raises a really quite separate question from that of the anti-trust laws. To condemn restraint of trade is by no means the same thing as to ensure fairness of competition. Nor do all unfair methods of competition tend to monopoly. The Trade Commission, therefore, has found itself forced to act as an authority on business ethics; and in this respect it has coöperated with the voluntary associations of producers and traders to secure the definition and acceptance of reputable methods of procedure. More than this, at present, it can hardly do; but it is likely that more may be required.

We have already encountered in the mining and genetic industries an indisputable need for the establishment of centralized controls over whole industries. Industry has in fact been attempting with considerable success to concentrate control, both of production and of marketing, in many other fields, and it is at least arguable that such centralization is more desirable than the attempt to disintegrate integrated systems. The problem involved is no longer the simple and exhilarating pursuit of "trust-busting" as envisaged by Mr. Roosevelt and Mr. La Follette, Sr., but the far more difficult

one of securing that the advantages of a planned policy shall accrue to the public at large rather than to the private pockets of a small minority of powerful individuals. As Attorney-General Mitchell stated in his annual report for 1930: "Any measure which permits combinations to restrain production seems to lead to the necessity of protecting the public by governmental supervision of the combination, and that is a dubious proposal." In one sphere of economic life the Federal government has acted on the principle of positive regulation with very instructive results. To this sphere we must now turn our attention.

IX

BUILDING THE HEAP: TRANSPORT

§1. To the foreign visitor no achievement of twentieth-century America is more impressive than its public highways. The system of communications called forth by the internal-combustion engine constitutes as fine a piece of communal enterprise as the world can show; and it is the more striking as coming from a people whose official slogan is "rugged individualism." The communications system called forth in the last century by the steam engine was developed, not by public, but by competitive private enterprise with the aid of state and Federal subsidies — mostly in the form of land grants; and its development illustrates a series of problems that the highways of the country, fortunately, have escaped. These problems illumine the whole field of modern economics — for railroad economics differs much less nowadays from industrial economics than is generally supposed. Before examining them, however, let us be on our guard against reading history backwards. Private enterprise achieved the economic unification of America in the only manner that the then state of society allowed; and it achieved that result at amazing speed. A great part of the price, social and economic, was in fact

postponed until the twentieth century and has still to be paid; but the one legitimate observation we may make on the contrast between nineteenth- and twentieth-century ways of doing things is that the pioneering methods and impulses that built up the system are not necessarily the best possible means of running it once it is established. The same observation is applicable to much of modern industry. The shock troops of private enterprise and competition are in fact gradually being replaced by trained regulars whose methods and discipline are very different.

§2. The first feature of transportation economics that we have to note is the very large amount of fixed capital necessary to the running of even the smallest service. Capital in the strict (Marxian) sense is nothing whatever but congealed labor. It takes the form of goods (girders, ties, rails, stations, and so on) whose sole use is in the production of income, not in direct consumption. And in a perfectly socialized State the costs of these things, which must be collected from the users of the service, would presumably have to cover simply the accumulated labor involved in their preparation. But in the actual world a lot more is involved in capital. People acquire private *claims* to all kinds of things — land, waterways, minerals, ideas (patents) — which the builders of the system wish to utilize; and the costs of these rights must also be covered at whatever figure bargaining has put them. It is obvious that railroad builders need a vast accumulation of capital goods and capital rights

at their disposal before a single train can run. This accumulation, represented in money values, they collect in advance from investors. In ordinary industry stock is usually issued to the investors as evidence of their proprietorship in the enterprise and their proportionate claim to a share in its profits. In railroads most of the fixed capital is represented by bonds which place the investor in the position of a creditor, not a proprietor, entitled to a fixed rate of interest on his investment instead of a variable amount of profits. The payment of interest and principal on these bonds, therefore, makes a high *fixed charge* on the income yielded by the service. This fixed charge constitutes, as a matter of fact, about 27 per cent of total railroad expenses. It is important to notice that a fixed charge of this sort does not vary with the volume of traffic; it continues whether the traffic is large or small; and the railroad has therefore a strong incentive to the principle of maximum utilization.

§3. The fixed capital charges are, however, not the only ones which are independent of the volume of traffic. The general administrative expenses of operating a railroad are largely fixed. The costs of maintenance of the road, its structures, and its equipment are at least 50 per cent fixed. Even the actual expenses of moving the traffic do not vary directly with the volume; for example, the fuel consumption of a locomotive nowhere near doubles when the length or the weight of a train is doubled, and a great many trains have to run

whether they are full or empty. Taking it all in all, railroad costs work out something like this: —

	NON-VARIABLE	VARIABLE	TOTAL
Fixed charges (per cent)	27	0	27
Operating expenses (per cent)	34	34	68
	61	34	95

Now if on these figures we call gross receipts 100, we have a margin of 5 for distribution to the stockholders. But now watch the effect of increasing the traffic by a small percentage, say, 10 per cent. Our gross receipts then rise to 110; but only the variable part of our expenses will be affected; and even if we assume that this part varies in direct proportion to the increase in traffic (which it does not altogether), our new expense account will look something like this: —

	NON-VARIABLE	VARIABLE	TOTAL
Fixed charges (per cent)	27	0	27
Operating expenses (per cent)	34	37.4 ¹	71.4
	61	37.4	98.4

This will leave us, instead of the 5 that we had before for distribution as profit, 11.6 (110-98.4). The net profit is more than doubled by an increase in traffic of only 10 per cent. Hence, competition between railroads, unless regulated in some way, tends to become extraordinarily severe.

§4. At this point we may notice a phenomenon occurring in many branches of industry, known as *joint costs*.

¹ 34 plus 10 per cent of 34 (3.4)

To take the meat-packing industry as the most conspicuous example, it is well known that along with the preparation of meat a great many other products arise — hides, fertilizer, glue, tallow, soap, insulin, adrenalin, and other glandular extracts. All these things have a large part of their costs in common, and it is not possible to say exactly how much of the original cost is attributable to any one of them. Each one has also its own special cost of final preparation; but so long as this special cost is covered by the market price, everything over and above that is so much to the good, as making at least some contribution toward the joint costs which would arise anyway. Above this lower limit set by the special costs of each product, the selling price will be determined entirely by demand. Some products will earn a good deal more than their special costs, while others will only move at practically that figure; so the products for which demand is strong are made to bear the share of the joint cost that might be attributed to the products for which demand is weak. This is, in fact, the only way in which the joint cost can be distributed among the various joint products.

Now when we turn back to railroading we find this principle at work in two ways. First, it encourages railroads to compete for new business by offering rates which barely cover even the special costs involved in handling that additional business; and it can easily be seen that the effect of competition may well be contagious to other rates, and involve the competing roads in

such a struggle to retain their maximum traffic that a condition ruinous to all of them might soon come about. As a matter of fact, this competition led to all sorts of rebates and discriminations granted to particular shippers whose volume of traffic was important. And in course of time some of these shippers (the Standard Oil Company was the most famous) became so strong that they could play off the railroads one against another, with a continued downward pressure on the rates. The outcome of this situation was to force the railroads in self-preservation to enter into agreements with one another for maintaining rates, and in some cases for sharing their traffic or even their income. This stage was already reached in the '70s of last century. But as it ran counter to the prevailing creed of competition, it was met by legislative opposition on the part of the states and subsequently of the Federal government. One such case we have already mentioned (page 112).

§5. Second, the phenomenon of joint costs in railroading affects most noticeably the problem of fixing rates for different kinds of goods, in which connection it is known as the principle of "charging what the traffic will bear." Many staple commodities for which the demand is not very elastic, but which are of basic importance in determining the volume of transportation, will not move at very much more than the special cost involved in their handling: coal, lumber, raw metals, sand, cement, bricks, and so forth. Other commodities — silk, cigarettes, specialized machinery, for example —

are much less affected by the cost of transportation. Rates, therefore, are adjusted between the various classes of freight so as to secure the maximum utilization of the road; and this leads to a justifiable discrimination in favor of the staple products, whose contribution to joint cost is charged to the latter types of product, the demand for which is strong enough to bear it. In practice, the problem of rate fixing calls for the utmost delicacy and the widest experience, seeing there are no *a priori* rules to fall back on as an alternative to the method of trial and error.

§6. We have now alluded briefly to discrimination between shippers and discrimination between classes of freight—the former on the whole unjustifiable, the latter on the whole justifiable. There is one other type of discrimination encountered in railroad economics—discrimination between places. For example, through traffic between, let us say, North Atlantic ports and Chicago is competed for by a number of railroads; with the result that through rates for this traffic are driven down to very low levels. But on each of the competing roads there are intermediate points for which the service is not competitive; and it may therefore happen that the rates to these points from either terminus are as high as, or even higher than, the rates for the entire trip. The same situation exists where competition on the long haul arises from other forms of transportation (for example, canal transportation from the Lakes to the Atlantic seaboard, or ocean transportation between the At-

lantic and the Pacific Coasts). This situation has led to what is called "the long and short haul clause" in railroad legislation, and constitutes a clear case in which the principle of competition cannot be relied on as a final determinant of railroad charges.

§7. The operation of these economic factors through the last fifty years furnishes the most interesting study in the development of social control that modern history has to offer. The story begins with the universal acceptance of the dogma of free competition; and we find both state and Federal governments endeavoring to force this dogma down the throats — or funnels — of the railroads, irrespective of whether it would fit or no. The Interstate Commerce Act of 1887 — the first Federal law — tried to enforce competition by forbidding all pooling arrangements among the roads and prohibiting various kinds of discrimination. It also laid down the terms of a momentous problem by enacting that rates were to be "reasonable and just"; what this might mean over thirty years were required to discover. Experience soon showed that negative regulation was not sufficient to deal with the problem of railroad rates, and positive regulation was gradually resorted to. In 1906 the Commerce Commission was given the power to prescribe maximum rates, and in 1910 the power to suspend changes in the rates. Finally, in 1920, the Commission acquired the power to prescribe minimum rates as well. In the meantime, the question of how reasonableness was to be determined had undergone a striking evolution.

It is evident from the bare outline above given that the reasonableness of rates cannot be determined on the basis of specified rates for specified places or commodities, but must be treated in regard to railroad income as a whole. The question thus develops into a study of the basis of railroad net income. Now in tackling this question two paramount considerations obtain. First, that it is not a matter of indifference to the public whether or not a railroad continues to function. It may not matter much to the community whether or not a particular manufacturer of candy or cigarettes is driven out of business; but a railroad is obviously "affected with a public interest." Second, by the accepted principles of Western industrial civilization, the supply of capital for the development and maintenance of industry, including transportation, is left to the voluntary action of the free investor. In Russia this is not the case. The allocation of capital for the development of industries is not determined by the free action of private investors but is deliberately arranged by authority of the government. The American principle, however, *in which lies the essence of the laissez faire doctrine*, demands that railroad income be so determined as to provide a margin of profit sufficient to attract the necessary capital in the open market with no element of coercion. We thus find ourselves confronted with a rather peculiar situation. On the one hand we have regulation of railroad rates (which in practice comes very near determining railroad income) by government authority. On the

other hand we have the principle of *laissez faire* in regard to the supply of railroad capital. It is doubtful whether this peculiar combination of principles can permanently endure. Let us see why.

§8. The present status of American railroads is determined by the Transportation Act of 1920. This was the act under which railroads were handed back to private operation after the government control of the war period; and the financial situation of the railroads made it imperative to undertake a thorough revision of the entire system. The financial problem is easily illustrated by the fact that whereas in 1917 railroads had been able to raise 54.3 per cent of their annual new capital by stock issues, the proportion declined steadily until in 1925 it stood at only 3.4 per cent. The result, of course, was an increasing resort to bond issues and other forms of credit, which in turn increased the difficulties of the railroads by their constant addition to the fixed charges. The Transportation Act deals with three main issues, which we shall take in order. These issues are (*a*) rate regulation; (*b*) income equalization; (*c*) consolidation.

§9. The problem of rate regulation turns on the meaning of the word "reasonableness." This word had been given a peculiar meaning by the Supreme Court as far back as 1898, in the famous case of *Smyth v. Ames*. The Court said: "The basis of all calculations as to the reasonableness of rates must be the fair value of the property being used for the convenience of the public." Following this dictum, the Federal courts have entertained

cases in which railroads appealed against rates that they considered low, on the ground that these rates were "confiscatory" of the value of the property and so fell under the Fifth or Fourteenth Amendment to the Constitution; the assumption being that the value of the property was impaired by the diminution of earning power entailed by the low rates. This line of argument clearly connects the value of the property with the earnings and is in accordance with the usual principle that we apply in valuing all capital goods. The reason that you are willing to pay fifty cents for a screw driver is that you expect it to yield an income in the service of driving screws; and the fifty cents is your estimate of the present value of that income. If, however, you find when you have got it that it is made of bad metal, and instead of driving screws bends or twists under pressure, you are out of luck; your estimate was mistaken, and that is all there is to it. You will not, if you are wise, buy that sort of screw driver again, and if other people follow your example, the firm that made it will either have to produce better screw drivers or go out of business. That is the usual principle applied to all investment in capital goods. The sum which one is willing to invest is ultimately determined by the estimate of the future income that the investment will yield. And the argument runs backwards from prospective income to capital value.

But when it comes to determining the income of a railroad or a public utility by fixing its charges, it would

obviously be arguing in a circle if we said that the rates must be such as to yield a reasonable return on a value which was itself derived from the earning power. The Commerce Commission itself, in a 1927 report, set out the paradox that would ensue.

The rate authorized controls the amount of earnings. The earnings in turn determine and fix the value of the property. Therefore the rate determines the value, and the value determines the rate; and if the value of the property depends upon the rate, which in turn depends upon the value of the property, the rate would depend upon itself, resulting in an apparent absurdity. It is therefore clear that such value as is attributable to the property of a public service corporation by reason of its earnings should not be included in forming a base upon which a reasonable and fair return should be secured.

But can there be a "value of the property" that is not dependent on its earning power? The answer is that so long as the *Smyth v. Ames* principle of rate making is adhered to, there has to be, whether the assumption is sensible or not. The Transportation Act embodies the *Smyth v. Ames* principle in its instruction to the Commerce Commission so to fix rates as to secure "an aggregate annual net railway operating income equal as nearly as may be to a fair return upon the aggregate value of the railway property of the carriers held for and used in the service of transportation." The Commerce Commission is therefore given the job of discovering a value of the property independently of the earning power. But

it is not told in the Act precisely how to do this. It is merely given a long list of items that it must "consider." Having discovered the value, the Act itself fixes the figure of $5\frac{1}{2}$ to 6 per cent as constituting a fair rate of return.

Now it might be expected that contention would arise over this figure. Some contention there has been; but the really hard-fought issue is as to the base — the valuation on which the percentage is to be calculated. And out of the mass of conflicting arguments two broad principles of valuation occupy the forefront of controversy. The Commerce Commission, endeavoring to keep rates low, has inclined to take the "original cost" basis of valuation. The railroads in a period of rising prices have favored the "reproduction cost" basis of valuation. The main difficulty about the former basis is the difficulty of ascertaining it; but when ascertained it has at least the merit of finality. One of many troubles about the reproduction basis is that it necessarily changes with changing price levels and might conceivably in a deflation period fall below the original cost basis. Another main trouble is that reproduction cost is entirely hypothetical and includes increments or decrements to value which are not, as a matter of fact, realized in any actual transaction. But the basic trouble about this entire principle of determining rates is that it involves the rate-fixing body in the primary duty of protecting the investor; and it is open to very serious question indeed whether, so long as the supply of capital is left to *laissez faire*, it is really

wise to use the power of government as a buffer between the free investor and the economic risk.

§10. In dealing with (*b*), the problem of income equalization, we meet a phenomenon common to all industry. Any price level uniformly applied to a number of separate concerns will give higher net income to some than to others. Now in ordinary competitive industry the traditional economic argument is that competition is continually tending to reduce this price level, with the result that high-cost or marginal firms are driven out of business and their place taken by lower-cost producers. How far this argument is relevant to modern conditions we shall presently examine; but Congress has determined that at any rate it is not relevant to railroads, because the so-called "weak" roads may be just as essential to their communities as are the "strong" roads to the more prosperous regions. Therefore, in determining uniform rate structures, the Transportation Act decides that some special provision is necessary for the weak roads, seeing that the entire level of railroad rates cannot be based on the necessities of the high-cost or marginal concerns. The Act therefore stipulates that any earnings in excess of the "fair rate of return" made by a railroad should be divided into two parts, of which one may be retained by the road as trustee and used only for narrowly specified purposes, while the other half must be handed back to the Commerce Commission to build up a fund for assisting the weak roads.

Now, as we saw in the case of mining, a complete uni-

fication or the industry could set off the high profits of the low-cost concerns against the low profits (or losses) of the high-cost concerns to strike an average price that would yield sufficient net income to the industry as a whole. The same thing would be true of railroads under government ownership. But as unification of this type was unpopular, Congress endeavored to find a halfway house in the "recapture" clause just described. The operation of the clause, however, has proved so unsatisfactory that the Commerce Commission itself is now recommending its repeal; and the fate of the weak roads is still an unsolved problem.

§11. In the forty-odd years following the Interstate Commerce Act of 1887, the dogma of free competition has lost a good many of its adherents. Experience has shown that at any rate in the cases of railroads and public utilities it is not the all-sufficient rule of life that nineteenth-century politicians professed to believe. In this respect, once more, the Transportation Act erects a halfway house. The Commerce Commission is instructed to prepare a grand scheme of railroad consolidation for the approval of Congress, and pending such a scheme is given power to approve railroad mergers provisionally. The Commission has labored for over ten years on its scheme, but has found an almost insurmountable difficulty in combining its ideas of public interest with the schemes of the railroad companies for mergers that they consider financially desirable. Once more the position of the weak roads which nobody wants to adopt is prov-

ing a stumblingblock; and once more the Commerce Commission is inclined to the view that it should be relieved of the duty of preparing one grand scheme of consolidation and given final power to pass on proposals for mergers as they arise. In this respect, as in others, the halfway house is not proving a very desirable habitation, and the prospects are that it will shortly be abandoned — in which direction it would be dangerous to prophesy.

§12. A final word must be added as to the element of labor costs which in our analysis of mining we saw to be highly relevant to the problem of unification. The Transportation Act embodied, quite logically, an elaborate system for the arbitration and settlement under Federal auspices of labor disputes, including those concerning wages. This system, following its defiance by the Pennsylvania Railroad, completely broke down, and it may be said that up to date no satisfactory substitute for it has been devised, though several have been attempted. Here once again the attempt to introduce a planned economy without running counter to the basic assumptions, and vested interests, of *laissez faire* has not been conspicuously successful.

X

EXCURSION ROUND THE HEAP

§1. We have now taken a rapid glance at some typical contributions to our national heap; not all of them, of course — one type of contribution in particular is so specialized that we must postpone its examination altogether, for the present. But we have a rough idea of the way some basic contributions are made; let us now climb on to our eminence of philosophic detachment and look at the lie of the land.

Well, here is our heap — a stupendous thing, containing lots of everything that we need, or want, or think we want; and round about it are the forces of law and order to protect it from depredation and prevent any rioting in the sharing-out. Here and there are groups of learned people measuring it up and computing the relative amounts of this, that, and the other; and outside them is the great mass of citizens waiting for their shares. There is a tremendous hubbub going on, and it is evident that the process of sharing-out is not proceeding very smoothly. The heap apparently refuses to diminish fast enough. The traffic away from the heap seems altogether too slow, as if something had gone wrong with the distribution of the tickets. Over here

is a group of seven million men with their wives and parents and children, looking wistfully at the heap because they have no tickets at all. They cannot understand this, because most of them have contributed to the heap so far as they were able. All they want is in the heap, but they have no tickets. Now and then one of them tries to take something from the heap without a ticket and is caught by the police and shut up in jail. Dotted about are groups of people getting together to give up some of their own tickets to the hungry men. Off to one side, in a place labeled "Congress," people are debating whether it would not be wise to have a law by which all those who have tickets should be compelled to give up some stated amount, and have the whole thing done in a more orderly way. Sitting on the ground here and there are strange creatures called economists (you must look closely to see them), scratching their heads and wondering how, even if we do have such a law, the total amount of things taken from the heap will be increased or the distribution sufficiently speeded up; but nobody is bothering about them, so let us look elsewhere.

Over yonder is a very impressive group of people. They represent the permanent foundations of the heap, without which it would fall to pieces: the land, the machinery, the buildings, the railroad track, the whole capital equipment. These people are waiting for the annual payments that are made to them on account of the continued use of their property. Some of them have

documents, such as bonds, mortgages, or leases, setting forth contractual claims to stated amounts—claims which the law will enforce. Others of them (stockholders) have taken a chance on what they will get, and are getting fewer tickets than they expected; some of them, in fact, no tickets at all. There seems to be a good deal of argument going on between this group and the neighboring groups. Let us make our way through the crowd and overhear some of it.

§2. On our way we encounter various schools of opinion. Here, for instance, is a small but vociferous group shouting, "Tickets for all! Tickets for all!" We pause to inquire where the tickets are coming from. We learn that the government is to print them. How is it to distribute them to the people? Why, just give them. How many to each person? Enough for the necessities of life, anyhow. Would the people then do enough work to keep up the heap? Our informant thinks they probably would; if not, he has various schemes for compelling them.

§3. Here is another school, also arguing that there ought to be more tickets. We repeat our question as to how the new tickets are to be distributed. The group seems a little vague about that; and as that is what seems to be the trouble about the tickets we already have, we pass on, feeling rather disappointed. Here is a procession of prosperous gentlemen carrying placards: "Buy now! Spend more!" We observe they are carefully avoiding the direction of the seven million. Here is

figure as a reasonable basis on which to pay interest? Some of you hold blocks of securities that were handed out to you for your services as 'promoters' on a basis that was anything but reasonable. Lots of you corporation directors have acquired property rights or stocks of other companies, or physical assets, at prices out of all proportion to their real earning power. And some of you — especially you over there from New England — have created permanent capital claims out of purely temporary prosperity arising in a high-price, high-tariff interlude. You issued stock bonuses, doubling or trebling your share capital, and then expected to go on paying dividends indefinitely on that inflated basis. The domestic market breaks, deflation comes, foreign buying power is curtailed, and you run into financial bankruptcy that need never have happened. And all you investment bankers over there, selling new securities to the public on the strength of mergers: how often does the capitalization of the merger fail to exceed the total of the combined concerns? Economies justify that, you say? Yes, perhaps, in part. But is not increased control of the market the main argument? and does not that mean simply that your merger takes more tickets from the public in proportion to those it gives out to its employees and its creditors? That is legitimate, you say? It may be legal; but whether it is legitimate is precisely what we need somebody to determine. The root of the trouble is — ”

§5. But a foreign gentleman insists on our attention.

It appears he is a German, and a large part of the audience has not yet discovered that the war is over. Let us give him a hearing.

"You Americans," he says, "have tackled this entire problem of big business from the wrong end. In my country we settled it nearly fifty years ago by a quite different method. Since then, we have had far more experience of combines and mergers than you have, but our method of dealing with the question is still intact and we have not needed anti-trust laws of the sort that have given you so much trouble. Our secret is a very simple one. We do not allow the capital claims of a corporation to be put at any figure that the promoters find attractive. Our government has very strict rules about that. It controls, through those rules, the relation between the real assets of a corporation and the securities that are issued to the public. It is very particular about the manner in which capital takes its share of the annual earnings; and it enforces not only publicity, but personal liability on the incorporators and directors as regards both the establishment and the carrying on of the financial side of the business."

"But do not your business men object to all that?"

"They did at first. But they soon came to realize that regulations of that sort make for soundness and public goodwill. The listing committee of your New York Stock Exchange works on the same principle. And for the same reason. After all, your industrial progress leaves a very broad band of insolvency in its wake. We

Germans cannot afford that. Perhaps even you Americans will not be able to afford it forever."

"But our textbooks talk about the elimination of high-cost concerns as the essential condition of progress. It is true they do not say much about high capital costs, but presumably those are covered by the argument."

"That may be acceptable to you. We are not so wedded to *laissez faire*. That is a legacy of the French Revolution that we Germans never admired very much. Argument of that sort was welcome to you Anglo-Saxons in the nineteenth century because your business men saw in it a strong case against regulation, and because each one of them thought that it was the other fellow who would get stranded at the economic margin. And the general public accepted it because if a concern failed it was none of their business. Nowadays, with your lists of stockholders running into hundreds of thousands, it is the public's business. So every device of your system is directed to maintaining the capital structure intact. But how can you hope to do that unless you have expert and impartial supervision of the way that capital structure is built up? That is what we Germans do through our corporation laws. That is what we think corporation laws are for."

"But how can we do anything like that, with our forty-eight separate states claiming independent jurisdiction in the matter?"

"Ah, that is your problem. It is, I am afraid, a case of what one of your writers has called 'cultural lag.'"

"And you say you have no anti-trust laws?"

"In your sense, none. We have a new law of 1923, giving the government certain powers over trust agreements. But the basis of that law is a broad conception of public interest, not the narrow dogma of competition. Then we have another law something like Section V of your Trade Commission Act, dealing with unfair methods of competition. You may be interested to know that we are now using that law, in certain cases, to protect approved wage standards. There seems to be no reason why your Trade Commission also, if it liked, should not include conditions of labor in its interpretation of the phrase 'unfair methods of competition.'"

"Is not that rather far away from the point we were discussing about the sharing of the tickets?"

"Not so far as you think, perhaps. I wonder, for instance, if our 'too-much-saving' friend over there might not be interested in it."

§6. Let us leave the German gentleman to make what converts he can, while we return to our eminence of philosophic detachment. It is high time, for the noise of argument all around us is really bewildering. Fresh contentions seem to crop up at every turn. Quite a lot of religious groups have joined in the *mêlée*. Let us give them a greeting as we pass; we are glad to see the churches reasserting their right to a say in the business affairs of the people as they did in the great days of religion. Most of them are talking about labor and wages; but here is a group — can we believe our ears?

—reviving the issue of the usury laws that we all thought were dead and done with ages ago. Here, again, is a band of trade-unionists whose leaders have a distinctly British appearance. What is their slogan? “The maintenance of the worker should be the first charge upon industry.” Can we believe our eyes? Here are some American business men actually joining their procession. Somebody breaks away from their ranks to demand of us: “Why should not labor hire capital instead of capital hiring labor?” We must hurry back to our eminence, lest we find ourselves in a condition that numbers of the crowd appear to have reached already — a condition in which they are prepared to endorse almost anything, from sheer weariness and confusion.

Clearly, there are two things we want to know before we consider any of these slogans. First, who determines the ticket values of the things brought into the heap? And second, where do the tickets come from? Let us take these in order.

PART III

PRICING DEPARTMENT

XI

DEMAND

§1. Why does anybody bring anything to the heap? Because every bringer of every thing knows, or believes, that somewhere there is someone else who wants it, or will want it when he sees it. That is the only reason.

A good deal of service is performed, and some goods are created, that do not find their way to the heap at all. I have a pile of wood in my garden that I want stacked up in the cellar. I may do the work myself, partly for the result and partly for the exercise — which latter would be a sort of payment; the service performed does not enter the heap in that case. But if I get a laborer to do it, as I probably shall, the service will become a part of the annual heap and in return the laborer will receive some of my tickets. With these he can draw something else from the heap — say, the services of a barber. But the laborer and the barber are in the neighborhood offering their strength or their skill only because they think the exercise of that strength or skill is wanted by someone. If they find they are mistaken they will presently go away and try their luck elsewhere. And if

they have no luck within their geographical range, all that has gone to create that strength and that skill will be lost and fruitless.

Here comes a man to the door selling balsam wreaths for Christmas. It is an American custom unknown to the English. Last time my wife was in London for Christmas she saw some wreaths in a shop window, bought one, and took it to the house at which she was staying as a contribution to the season's festivities. She was asked whose grave she was going to visit. My wreath seller on the doorstep was here last year, too. Last year he did all the work himself and carried his wreaths round with him. This year he is taking orders. He says he now employs a boy to go to the woods for the balsam, and a girl to make the wreaths. He has become a small employer, handing on to the boy and the girl some of the tickets the neighbors and I will give him. Then they will all three go to the heap and pick whatever their tickets will bring. I suspect that if anyone caught that boy a few of the tickets would have to be passed on to some landowner. And where do my tickets come from? Well, I have been giving some lectures for which I received some of other people's tickets. And those people in turn brought something to the heap for which they received tickets from other people, and those from still others, and those in turn — Why, it looks as though the tickets simply circulate! Yes, their circulation is the main fact about them. They go round twenty-five to thirty times a year. But that is anticipat-

ing; we are not yet concerned with the tickets. We are concerned with the "wants."

Now a want seems at first something so patent that there is little to be said about it. Let us admit, however, that the want is often latent rather than patent. It is, in our Western economic system, most frequently a response to a calculated stimulus. The stimulus may be an actual experience of some new thing, or a sight of it, or a mere description of it (more or less truthful). The fact that the response is largely calculable is important. We began by saying that people bring things to the heap simply because they know, or believe, that other people want them; perhaps we should now add "or can be made to want them." Which suggests that the nature of the heap is determined by people as "producers" at least as much as it is by people as "consumers." However, let us continue using the word "want" with this broader connotation in mind.

§2. Now seeing this is a book on economics, we must proceed in the traditional manner to take the simple notion of "want" and make it appear as complicated as possible. We can easily do this by pointing out that "want" is a psychological phenomenon, and then asking *how much* people want things? We need an answer to this question in order to get the tickets distributed. And we cannot have an answer because we cannot fit quantitative measures on to psychological experiences—either of wants or of satisfactions. Try it if you are doubtful. What now?

Let us have another look at the wood that I want stacked up in the cellar. Shall I do it myself on the next free afternoon? That depends. If it is going to take all the afternoon, I certainly shall not; if the job can be done in an hour, perhaps I shall. Then it will be an extra hour of leisure against the wood stacked; which do I want most? I think of the other things I might do with the afternoon — take a rest, play golf, listen to the radio, visit a friend, study or write; all these alternatives are implied in the general term “leisure,” and they all pass vaguely through my mind — leisure being rather scarce just now. Of course, if there were *nothing* else I wanted to do, or if I had *unlimited* leisure, I might be willing to give all the afternoon to the woodpile. As things are, I decide to give an hour to the woodpile and keep the remaining three for something else. Now, are we any nearer an answer to our question, *how much* people want things?

Yes, a little. We have not measured either the want for the woodpile or the want for the other things implied in “leisure.” But we have compared them, and even found a measure of their *relative* importance. We have discovered two other facts as well: first, that the relative importance of any one want depends on the existence of all the others; second, that the comparison is only possible because the scarcity of resources (in this case, leisure) compels a choice.

But we have not yet got a workable system of measurement, for the simple reason that the leisure is ex-

clusively my leisure and cannot be handed around to other people and made their leisure. If, however, we suppose some medium that will pass current (say, "tickets"), then we have a socialized system of want representation. The *relative* importance of my woodpile to me is then measured by one for the woodpile against three for things in general, in terms of "currency."

§3. Now, our entire system of wants, with their relative degrees of importance, is not a spontaneous or original thing. Some wants are physical in origin, and some conventional; but by the time we are grown up we cannot tell which is which, for by that time we have acquired an elaborate system of wants that we call our *standard of living*. The standard comprises broad categories of wants — food, clothing, housing, means of communication, recreation, education, and so on — in fairly definite relations to one another. The standard is not always realized; it may fail of complete attainment in short periods like the present, but as a whole it shows a good deal of persistence (or inertia) and changes rather slowly. Within the broad outlines of this system are many minor systems of wants. Most of these systems are wants for groups of things that are *complementary* to one another — tennis balls to go with tennis rackets, stationery and books to go with educational facilities, automobile accessories and good roads to go with automobiles, and so on. Some very important groups are determined on *vocational* grounds — the working outfit of a miner, a carpenter, an artist. And last of all

comes the *individual's* system of wants, expressing within the limits of the foregoing (or occasionally breaking those limits) his personality. No part of this complex is changeless. The standard itself tends to expand, and with it every other system of wants — not so much because men are conscious of insatiable desires as because they are naturally contriving, working animals. But the amount of change we can discover in the broad outlines of our want system is a good deal less than one might expect.

The impression of constant change that we all have comes not from the want systems as such, but from the tremendous variety of *specific* choices or substitutions possible within any one category. The relative importance, let us say, of pipe wrenches within either the vocational group of the plumbers or the want system as a whole does not alter sporadically or violently in short periods; but the actual demand for any specific kind or make of pipe wrench may be quite unstable. This instability will naturally be at its maximum in a system of unregulated competitive production; and, as we have seen, producers are now making all sorts of efforts to get rid of it.

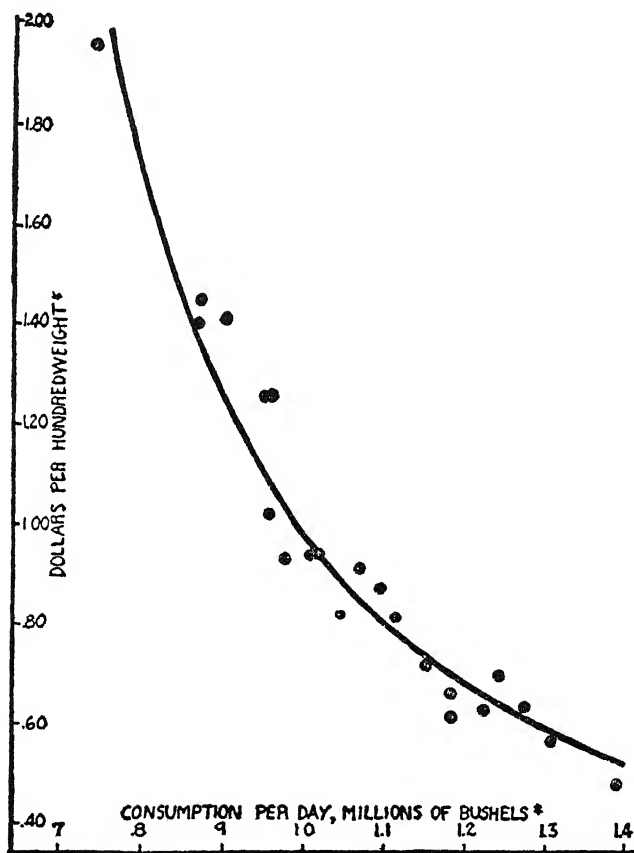
§4. But here is a new term trying to slip into the argument without examination — the term *demand*. Demand is the series of prices that will be offered for a corresponding series of quantities; or conversely, the series of quantities that will be taken at a corresponding series of prices. For things as a whole, a very simple

fact obtains: *total demand is total production*. It does not matter in what sort of tickets (currency) the prices are expressed; they may be in bits of gold, sea shells, old shoes, or what have you. And it does not matter in *how many* tickets the prices are expressed. Many or few, the central truth remains: total production *is* total demand. This is because, in their collective aspect, consumers and producers are identical. We look at the people from one end of a textbook and they all look like producers; we go to the other end and they all look like consumers. But they are the same lot of people, though we see them in different patterns according to which point of view we take. That is what we meant when we said in Chapter IV that the total of contributions reckoned *coming to* the heap must tally with the total of claims *going from* the heap. It follows that we cannot, whatever we do about the tickets, take more from the heap than there is in it. It also follows that unless the heap is to rot (as perhaps some of the Farm Board wheat is doing) or fall to pieces (as some of the New England textile machinery is doing) we must not take less.

Most of the demands that we know much about are specific. We do not, in practice, demand food (remember the technical sense of "demand"); we demand whole-wheat bread, Canadian bacon, rump steak, kippered herrings, Dutch cheese, and so on—specific things. And we keep on demanding them; we want so much a day, or week, or month. So in practice demands are reflected in *rates of consumption*. And we

can study these demands at two levels (sometimes much more than two). Many of the demands that appear in retail trade split up among competing brands, or slightly varied preparations, get lumped together in wholesale trade as demands for staple products like beef, mutton, tobacco, spring wheat, hides, sugar, coffee — graded and described in ways no housewife would understand. These demands are more regular and important than those of the finished articles at retail, since they have a more immediate effect upon policy and production. On the next page is a very good picture of one of them. It is the United States demand for potatoes in 1913. Notice the series of prices measured up the line on the left and the series of rates of consumption measured along the bottom. The sort of data on which this picture is based, and sometimes the picture itself, are spoken of as a *demand schedule*. All the data are supposed to obtain at the same time; and the term “demand,” properly used, refers to all of them. A change in demand means a shift of the entire curve, or some part of it — not merely a move from one point to another of the same curve.

§5. Why does the line fall from left to right? For an obvious reason: people are willing to buy more at lower prices. They are willing to pay a very high price for a small quantity of something they really want rather than go without; but the utility (want-satisfying capacity) of each unit that is bought depends on the total number acquired, and falls as that number increases.



* ON BASIS OF 1913 PRICE LEVEL AND DEMAND

The Demand for Potatoes in the United States in Terms of Prices in St. Paul and Minneapolis

The larger the supply, the smaller is the importance, or utility, of any unit or any few units. This is the principle of diminishing marginal utility — the word “marginal” meaning unit or small group considered *in relation to the total*.

§6. We can at once deduce a rule of the utmost importance to economical planning. Let us take one more look at that woodpile. Why did I decide to spend one hour on it and not two? Because my estimate was that for *more than* one hour’s work the return, or satisfaction, I should get from piling the wood would be less than from doing something else. The limit of one hour marked approximately the switching point. So it is (or should be) in all spending. We spend (or should spend) on one line only up to the point at which we should get greater satisfaction from the next dollar, or nickel if we are hard up, by switching to another line; and in that way only shall we get maximum returns for our spending. To spend in any other way is to waste money, and really poor people know it; though they do not know that this principle rejoices in the title “Law of Substitution,” or “Law of Equi-marginal Returns.” A better name for it is the *Rule of Balance*, and that is the name we shall use in this book. For most people the principle is more familiar in production. A business or a department store watches the rates of net return earned in each department. Where a rate of return is higher than the average, fresh capital is pumped in, and continues to be pumped in until the return is no

higher there than elsewhere. In this way the total, or average, rate of return is maximized. The principle is exactly the same in both consumption and production; and, broadly speaking, it governs the flow of free investment also.

§7. Let us see what else can be learned from our picture of demand. Notice that the line is not straight — its downward slope varies a good deal at different stages. Up on the left of the curve a long fall in the vertical direction (price) is accompanied by only a short movement in the horizontal direction (quantity, or rate of consumption). Down on the right of the curve the latter measurement increases greatly in proportion to the same vertical drop. This relation between a given fall (or rise) in price and the corresponding increase (or decrease) in quantity demanded is called the *elasticity* of demand; and it is probably the most important aspect of demand for producers, though as yet their information about it is largely guesswork. Producers are constantly having to wonder what will be the effect on sales of a given change in price, or what change in price will be necessary to move a given increase in supply. A demand that is inelastic — that is, a demand that shows very little change in sales for a given cut in price — may cause a lot of trouble if its nature is not realized; for then it may happen that the receipts from a certain volume of production may aggregate actually less than those that would have arisen from a much smaller volume of production (see the case referred to on page 89).

There is reason to suppose that most curves of the sort pictured here, if we had the data to continue them still farther to the right (very low prices), would show another sharp dip in the vertical direction (highly inelastic demand). This seems to be the case in regard to current agricultural surpluses, and it has caused tremendous loss and disappointment to producers the world over.

§8. We may learn one more lesson from our picture: this time a social fact of great importance. Each price level in the picture corresponds to a certain quantity of sales; it also implies a certain *distribution* of the commodity among all the people. At the high-price ranges only a few people can acquire it — generally speaking, the richer ones. Now if the commodity is produced under conditions of decreasing cost (Chapter VII), and if cost decreases with expanding output faster than demand prices fall, the situation may right itself. But suppose this is not so; and suppose the commodity is considered essential to health or welfare? Then we can imagine a wise government dealing with the situation in one of two ways to make a wide supply available. The government might order the article or service to be supplied at less than cost, or free, and reimburse the producers with funds raised from the mass of people in some other way than by price. Most governments do this in respect of such things as education, police protection, drainage, fire prevention, and other public services. Medical attention just now is a moot case. Or

a government might distribute tickets (purchasing power) to the people on a basis of their need, to be used for this commodity — as in various kinds of poor relief, and in the contributions made by certain states to unemployment insurance funds. This method, however, is not comparable to the former, since it is essentially a remedial measure for exceptional deficiencies of purchasing power; whereas the former is a significant admission that the competitive price system does not always produce a socially desirable distribution of goods and services.

XII

SUPPLY

§1. In the preceding discussion we have tended to take the heap for granted. We began (Chapter IV) with a rough estimate of the size of the heap and proceeded to examine the ways in which some typical contributions were made; but as we are trying to be scientific we must now attempt to find answers to two quantitative questions. How much of *all* things will there be in the heap? How much of *each* thing will there be in the heap?

As for the first question, we have already encountered the principal factors determining the aggregate size of the heap. These fall roughly into two great classes — natural resources and human resources. The human resources include not only the quantity and quality of the people, but the state of technical knowledge and the efficiency of the various social institutions affecting economic life at a given time. These factors, taken in conjunction with the natural environment, fix rough limits to the possible size of the heap. But even within these limits there are certain variations of a non-calculable character. For example, the point at which the mass of people fix the division between work and weariness

will vary according to the prevalent state of mind and may perhaps be higher in an atmosphere of hope and idealism — as in Russia — than in an atmosphere of disillusion and despondency. Again, the division between work and weariness will be different according to the degree of compulsion under which people labor to produce goods for the heap. If the people are able to maintain a minimum standard of life without laboring to produce goods for the heap, — as they were to some extent before the industrial revolution and still are in primitive societies, — the amount of work they will do for the heap is likely to be less than in our present system, where it is only by working for the heap that they can avoid starvation. On these factors we can obviously put no numerical value, though they are none the less important.

§2. But when we ask how much of each thing there will be in the heap we encounter a very definite problem. We know in a general way that nature has fixed the possible rewards to a given amount of labor in various directions. Some things she gives us, under certain circumstances, for no labor at all — air and water, for example. But even these things are not given free in the precise circumstances in which we want them. Air in a skyscraper, a theatre, or a subway is not “free,” neither is water for the inhabitants of a city. Both, then, require labor in some form or other, and both have to be paid for. The amounts of things that we can get for a given quantity of labor vary very much. Under city conditions, costs

of everything are rather high because of the enormous labor of transportation and distribution involved in getting even the simplest things to the people. But under more normal circumstances we know that we could get much earth, but little gold; plenty of nuts and berries in season, but little grain; plenty of fish, perhaps, but little meat, and so on. Or if we take into account not only natural scarcity, but the amount of preparation necessary for our requirements, we may say that equal amounts of labor will give us much ore, but little metal; much rough wood, but few boards and still fewer tables; so much wool, rather less cloth, and much less clothing. If all available labor were divided equally between the various lines of production, we should have certain relative amounts of different things, which amounts would then represent the same quantities of labor; though a day's labor would mean very different amounts in each case. Is this the sort of heap that we do have, or are the relative quantities of things determined in some other way? In the preceding chapter we encountered a quite different principle. We said there that we require things in such amounts that a given expenditure on one represents about the same utility as the same expenditure on another; which implies that production is pushed just so far along each line that this balance is reached. But will it also be the case that when this balance is reached the amounts of real cost (labor plus) which our expenditure has to cover are also equal? The early economists thought that things

exchanged according to the relative amounts of labor embodied in them; that, for example, if a pair of shoes required five times as much labor as a pair of socks, the shoes would cost five times as much. But what did the consumer care how much either of them cost? What he wanted was shoes and socks in such quantities that a given expenditure on either represented about the same satisfaction. Accordingly, later economists stressed the importance of demand rather than of cost. Can these different explanations be reconciled?

§3. Let us take the case of a very small heap, built under very simple conditions, and see what happens. We are members, let us say, of a prospecting party of twenty men, far away from civilization. After a troublesome journey, we have reached the location where we intend to remain for some months, and our first task is to make a permanent camp. We divide up: say, five men on the spot, five to hunt for food, five to clear a road along which future supplies may come, five to trim lumber for a log house. At the end of a week we survey our progress. We have had barely food enough. We have a mile of road cleared. We have a hundred logs trimmed, and the camp is in good running order. These achievements, then, are all equal in terms of real cost. But that is not what we are thinking about. Are they also equal in terms of present and prospective need? Are they equally valuable in terms of our wants? We decide that for the second week we can make a better distribution of our resources. The camping party can

now spare a couple of men for other duties. What shall we do with them? Shall they join the hunting party and give us a better food supply now? Or shall they work on the road and hasten the time when we can get our food up from the nearest valley by pack train? If game is scarce, it will become harder and harder to keep us in food as time goes on. On the whole we think more labor on the road will pay us better in the long run than labor on the hunt. We put our two spare men on the road gang; and we decide to take one from the lumbering group and put him also on the road. We start our second week with three men on location, eight on the road, four on the lumber, and five foraging as before. We have redistributed our labor according to demand for the products; and in the redistribution we have estimated that we shall gain more by having three extra men on the road than we shall lose by their services in the camp and the lumbering.

§4. Notice that this is exactly the same principle that we saw, in the previous chapter, at work determining expenditures between different lines of goods. Just as we rationed what we had to spend (leisure, tickets, currency) between the different things in the heap, so we are now rationing labor by the same rule of balance. So it is in respect of everything produced for the heap. In principle, labor and all other productive resources distribute themselves among the various lines of production by trial and error to yield such quantities that the rewards obtainable by corre-

sponding amounts of resources are about equal. If the producers find themselves in receipt of more than the prevailing rates of reward in a particular line, more resources are attracted to that line until the point is reached at which the consumer is no more anxious for more of that line than he is for more of some other line. And in this way the two principles of equalizing labor costs and equalizing marginal utilities are reconciled. The principle remains true no matter how much inertia there may be on either the demand or the supply side in practice.

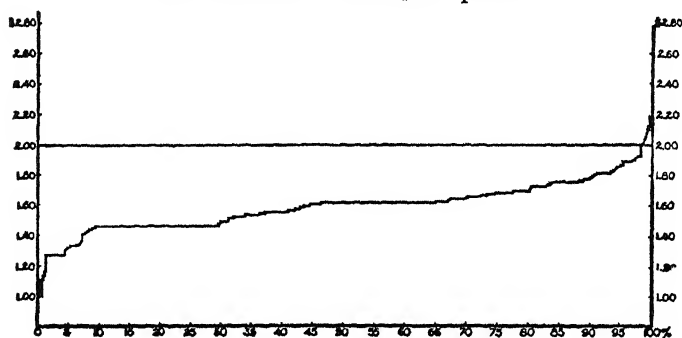
In real life, of course, the perfect balance is never attained. Want systems and production techniques are changing all the time, and resources are not nearly so mobile as our argument implies. Further, the whole system is steadily expanding, and this fact produces important results, on the supply side especially. We have already seen, in Chapters V to VII, the different effects of expanding output in certain industries. In some industries we discovered a tendency for unit costs to increase as production expands, while in others it tends to decrease. There is also a small class of industries (goods produced entirely by hand) where the quantity of output makes no difference to unit cost. The fact, therefore, that the whole system is in motion produces somewhat different results in these three cases.

§5. Before we can consider these results, however, we need somewhat more precise conceptions to work with. Let us begin by defining supply just as we defined de-

mand. By supply we mean the series of quantities that will be produced at a corresponding series of prices; or, conversely, the series of prices at which a corresponding series of quantities will be forthcoming. Such a series of quantities and prices is spoken of as a supply schedule; and since we had a picture of an actual demand schedule, let us now look at a picture of an actual supply schedule — the schedule for bituminous coal in Southwest Pennsylvania in September 1917. This picture is constructed

COSTS OF BITUMINOUS COAL IN SOUTHWESTERN
PENNSYLVANIA, SEPTEMBER, 1917

Cost in dollars per ton, as corrected and adjusted by the Fuel
Administration. Price \$2.00 per ton



by ranging all the producers in order according to their expenses of production, low-cost ones on the left, high-cost ones on the right; and of course the money levels represent expenses, not actually realized prices. The picture shows us, however, what would be possible in terms of prices. Notice especially the general shape of the line; it is, so far as we know at present, absolutely

characteristic of supply schedules in all types of industry.

§6. Next let us define the *elasticity* of supply just as we defined elasticity of demand. Elasticity of supply means the extent to which quantity offered will be affected by changes in price; or conversely. In the case of demand it appeared that quantity might respond to price changes in either of two ways—the present buyers might buy more, or new classes of buyers might appear with falling prices. These ways we might call the intensive and the extensive factors in demand. Similarly in the case of supply: with rising prices present producers might offer more (intensive expansion) or new producers might appear (extensive expansion); with falling prices present producers may produce less and some producers may disappear. There is no way of showing these intensive and extensive factors separately, because they coalesce in their effects. But we must consider them separately in order to show their importance for *elasticity* of supply.

The first signs of changes in demand show themselves as increases or decreases of orders *at the prevailing price levels*. How sensitive is industry to these changes? The answer will obviously depend on the kind of industry we are talking about. Most branches of manufacture are very elastic as regards expanding demand: they can speed up production, work overtime and put on night shifts (at slightly increased costs), take on more labor, and meet the demand very readily and promptly up to the point at which all concerns are working to

capacity. At that point pressure will accumulate and prices rise. But if the pressure shows signs of continuing, the *intensive* expansion will become extensive, and we shall have (after an interval) expansion of plant facilities or new concerns starting production. But as regards contracting demand there is much less elasticity, and the limit is reached much sooner. In a physical sense, plants can curtail production as easily as they can expand it. But not in a financial sense; because curtailment — owing to the element of fixed costs — is likely to lead to higher costs per unit, *at the very time when prices cannot be raised*. Resistance is offered; it may take the form of increased selling efforts; it may also consist in making for stock (a shock absorber). Presently price reductions will appear, even though there are no cost reductions to correspond. And ultimately, if the pressure continues, we shall have firms dropping out of production — closing down temporarily or permanently.

Notice that in this exposition our picture is not altogether adequate. We should (to tally with our exposition of demand) measure elasticity of supply by moving left or right along our supply schedule. But the facts above indicate that our line in the picture is itself elastic; it stretches or contracts *as a whole* within fairly wide limits; and only when those limits are reached does it begin really to grow, or lose portions of its extremity. The rates at which it (*a*) stretches, (*b*) grows, (*c*) goes to pieces, will vary with different *types* of in-

dustry. Manufacture is on the whole more elastic in supply than agriculture: it can make adjustments to changing prices quite promptly, whereas agriculture must think in terms of seasons at least. Some crops require much longer, and are therefore still less elastic in supply. Rubber, for example, can be adjusted to some extent by varying the frequency of tapping, but in the planting of trees at least a five-year perspective must be taken. Then the use of the shock absorber — holding products in stock — is possible in some cases (wheat and cotton, for instance) and not possible in others (fruit and vegetables). We have glanced (in Chapter VI) at some of the difficulties to which this comparative inelasticity of supply in agriculture gives rise; it means that in so far as the farmer cannot (for either physical or psychological reasons) adjust his supply to changing prices, he is in a very poor position to escape loss. And we may add here that demand for agricultural products is less elastic for *falling* prices than it is for rising prices. It is not very elastic, anyhow; but a 10 per cent undersupply is less effective, generally speaking, in raising prices than a 10 per cent oversupply is in depressing them. It is owing to these facts that prices of agricultural raw materials are subject to such extreme fluctuations. The facts show that there is a strong and special case for collective control by farmers, not merely over their production, but over their marketing as well. They can cause themselves more loss by unregulated attempts to dispose of a large crop in a short period than they can possibly

make up by a corresponding short crop the next season.

§7. Before proceeding further, let us now bring together the concepts we are working with. We have a broad outfit of wants falling into various systems; but in translating themselves into specific demands these wants appear mainly as responses to the stimuli offered by production and marketing. The intensity of any want will vary according to the presence or absence of other wants; or, in terms of demand, any specific demand may alter from causes lying entirely outside its own field and largely incalculable—though the risk is much less in regard to finished goods. Also, the intensity of want, or the level of demand for a given amount of a commodity, will vary according to the supply already available. Demand prices therefore reflect the relative utilities of unit commodities in view of the total amounts available. And the rule of balance suggests that total returns (utility) will be greatest when the returns to marginal amounts of expenditure (say, five to twenty dollars in practice) are equal in different lines; for when this condition is violated, it follows that more satisfaction would be gained by spending five dollars more on this than would be lost by spending five dollars less on that. Elasticity of demand—the degree to which demand prices alter for given alterations in supply—varies between different commodities, and also between different price levels (or quantities) of the same commodity (that is, the line of the demand schedule is not of even curvature). We must now add that it may also vary according to whether supply is

increasing from A to B or decreasing from B to A; the direction of movement makes a difference even between the same prices, or the same amounts — a fact very difficult to illustrate graphically. Elasticities of demand are probably low for most staples at ordinary price ranges, for the great group-demands that enter into the standard of living, and for articles that are involved in habits of consumption; but may be very high for strictly competing commodities or services, and for luxuries or novelties that are not yet subjects of habitual consumption.

Elasticity of supply similarly varies between different commodities, and between different price levels (or quantities) of the same commodity; it also varies with the direction of change — expansion or contraction. Productive resources (labor, capital, management, and so forth) tend to distribute themselves between different lines of occupations, so that at the demand prices for the relative amounts produced those prices yield about the same rates of return to similar services in production; if they do not, resources will tend to shift from the low rates toward the high rates, and new resources will follow suit. This is the rule of balance in supply; but its operation is impeded by so many obstacles and obstructions that the truth of the proposition is highly abstract. And there are certain types of industry to which the rule, as between them and other types, does not apply at all. These, together with some of the obstacles and obstructions, we shall examine later on. First, however, let us now set the whole system in motion and watch the wheels go round.

XIII

DEMAND AND SUPPLY

§1. Like the physical universe (if we may believe the astronomers), our system of production and consumption tends constantly to expand. Some astronomers have gone so far as to propound the theory of an “exploding” universe; and some economists think that unless we can bring the forces of our economic society under control, that may prove to be an exploding system too.

The expansive forces at work in our economic life consist of two major influences, common to humanity almost everywhere, and two minor ones characteristic of Western industrialism. The major influences are population and the contriving nature of man; these we have already discussed. The minor ones are the acquisitive instinct, hallowed by individualist and utilitarian theory, and competition. We have discussed the former of these in Chapter III; we must now see how competition is supposed to work in regard to demand and supply.

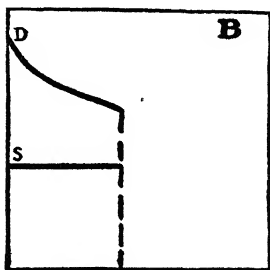
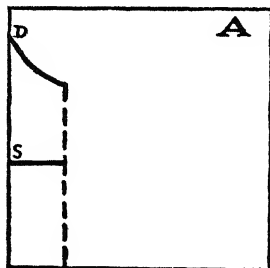
§2. Let us consider the introduction of some new commodity of such a nature that unit costs are not affected by the amount produced. This is the case usually described as “constant costs,” and illustrated by entirely

handmade articles. Actually it is doubtful whether a real case exists; because, even in regard to handmade articles, the assumption that increasing supplies of labor could indefinitely be obtained without raising the wages seems very improbable. However, we will make the assumption for the sake of simplicity; and for a similar reason we will assume that the unit costs of all producers are the same. Then our supply schedule can be represented by a horizontal line, no matter what the quantity produced.

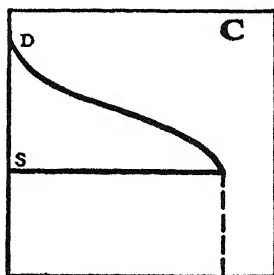
We begin with a small supply; and it turns out that competition among buyers runs the price up to a very high level, so that we have a situation as in diagram A.

This shows a very big margin above costs; and producers therefore expand their output, taking advantage of the opportunity for unusual gain. We may get, without altering the demand schedule (merely tapping it at larger output stages), an intermediate result as shown in diagram B.

There is still a considerable margin above costs; and so long as this exists, *competition among producers*, arising from the desire of everyone to increase his total gains, will push



the output still farther to the right. The eventual result will be a meeting of the demand and supply schedules at a point at which costs are only just covered. (See diagram C.)



And on the assumption that there cannot be several different prices at the same time for the same article, this is the price that will prevail. Notice that in this very hypothetical example we have assumed the *same* demand schedule throughout. Actually in the case of a new product, and to some extent in the case of most other products, we must allow for an increasing demand; which would show in our pictures as a movement of the whole demand line to the right.

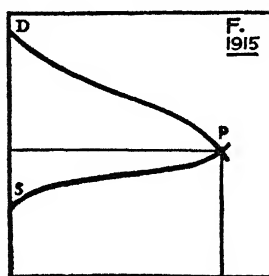
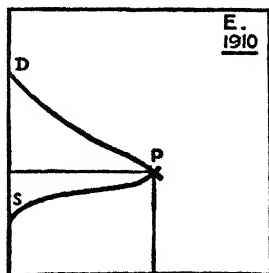
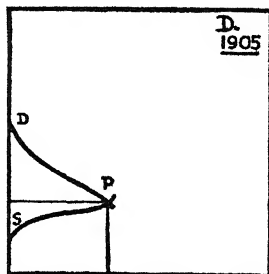
§3. Now let us consider what happens where we have not constant costs, but *variable costs*, taking separately the two types we have already encountered — first, industries in which unit costs tend to increase with time and output (extractive and to some extent genetic), and second, those in which unit costs tend to decrease with output (manufacturing and merchandising — up to a point).

We have in a given year (say 1905) a situation in which demand-and-supply schedules can be represented as in diagram D, with a market price at P.

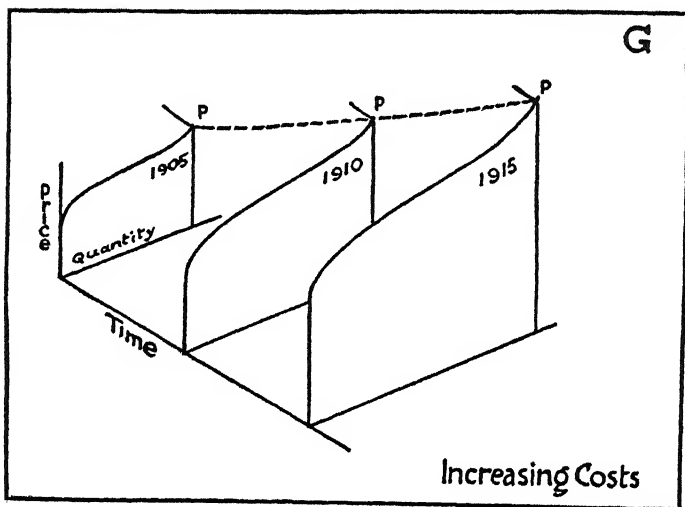
Now we assume the increase of demand (pushing our demand schedule to the right) and ask what will be the effect on our market price, say five years later. Since we are dealing with an increasing-costs industry, we find that our entire supply schedule has risen somewhat; so that the new situation is as shown in diagram E.

We can, for the sake of further illustration, imagine the process continued for another five-year period, with the results as in diagram F.

Now if we want to see what has happened to the course of prices, we must join the points marked P in all three diagrams D, E, F. We shall then have a line which is really moving through a third dimension—time, and to realize the situation we need to combine these three diagrams in one picture with three axes—price (vertical), quantity (horizontal), time (forward). Let us do it as



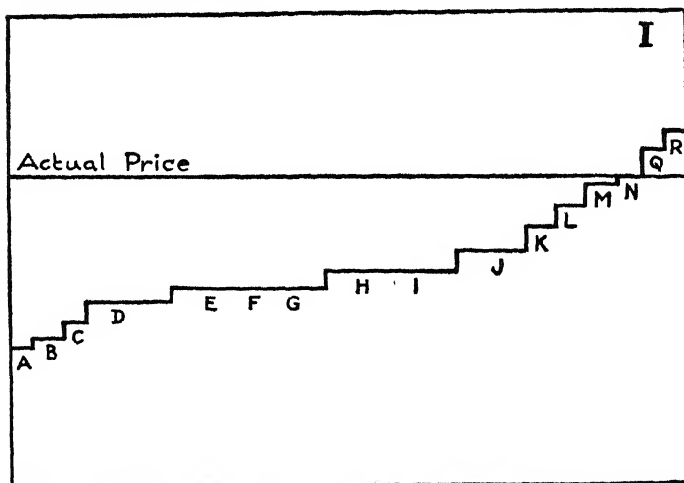
in solid geometry; and for the sake of clearness omit the full demand schedules, noting only the points at which they intersect the supply schedules (the "layout" of the industry) at each date. Here is the result: —



Notice that the line P-P-P moves through three dimensions — the third being time; and time flows only one way. It is really a *history of market prices*. The student must be careful in inspecting supply-and-demand diagrams in other texts; for the fallacy is very common of projecting this line on to one plane, then treating it as if it were the supply schedule of the industry, and arguing as though changes of demand could be traced forwards *and backwards* along it. This is quite misleading. A fall in demand in 1915 will not be met by the supply schedule (the "layout" of the industry) going

be, on account of the high fixed charges. But as this cannot in the given circumstances be met by raising prices to the buyer (demand prices are falling), we are likely to have part of the supply wiped out at the right of the schedule, and the rest operating at reduced earnings until times get better. *We cannot reverse the direction of the time axis*; and in any case, technique does not stand still.

§4. Now it will be noticed that in these diagrams the point P (market price) strikes the extreme right-hand limit of the supply schedule. But in real life it nearly always strikes *inside* the margin — by much or little according to business conditions. What does this mean? Let us drop the time factor, and examine the position “at the margin.” We will take an ordinary supply schedule in a given year, and show the actual market price by a horizontal line, thus: —



What has brought about this situation? The industry has virtually said to the public, You want 100 units of our stuff? Very well, you can have it; but you must pay a price high enough to enable L, M, and N to produce their bit, or else you will not get as much as you want. The picture shows L, M, and N doing their bit. But it also shows Q and R having a very bad time! Apparently Q and R are doing their bit for less than their expenses of production! Is something wrong with the diagram?

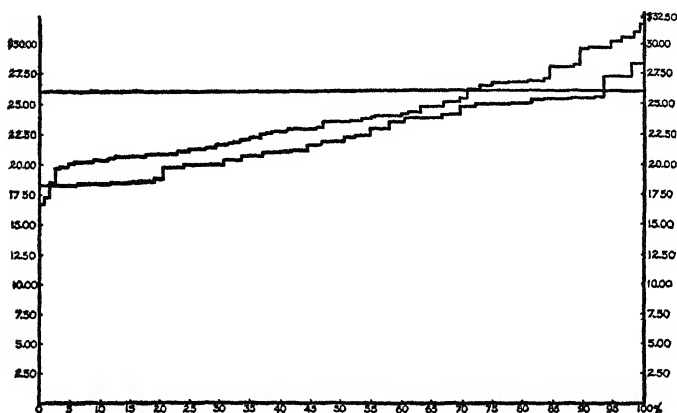
No, nothing is wrong with the diagram, but something is wrong with Q and R. Every industry has its Q's and R's—"extra-marginal producers." And in every industry, at every price level, we find a *centrifugal* tendency around the "margin of production." Some of the Q's and R's will succeed in their struggle to obtain a lower place in the supply schedule—to fight their way down into the low-cost group and get some of the big returns that are obviously being made there. Others will fail and be forced out altogether, while new extra-marginal producers (or low-cost producers who fail to maintain their efficiency) take their places. This struggle of producers to get places farther to the left of the supply schedule is the essence of economic progress; but under private competitive industry a very high price is paid for it in bankruptcy and labor displacement, and also in a chronic tendency to overproduction.

By way of illustration, the following picture of supply schedules for Douglas-fir lumber in the Northwest is particularly interesting; and the fact that in this case the

price was determined by an expert government commission makes it all the more significant. Notice, at the later date, the quite high proportion of Q's and R's!

COSTS OF DOUGLAS-FIR LUMBER IN WASHINGTON AND OREGON

The lower line for March and April, 1918, the upper for October, 1918. Costs in dollars per 1000 feet.
Price, \$26.00 per 1000



But, — to continue in the terms of diagram I, — now that we have inspected Q and R, who are M and N? They are apparently producers whose expenses are just covered by market price, and no more; but *what* expenses? This raises what is known as the problem of the “marginal firm”; a problem which illustrates an unfortunate tendency of economists to construct a hypothetical theorem first and wonder what the terms mean afterwards.

N — the marginal firm — means for the purposes of this book the firm which is able to maintain its position in the industry and develop its resources sufficiently to avoid loss or extinction without earning more than the going rates of return to either capital, labor, management, or ownership. If it cannot do that, capital for development will not be forthcoming and it will be gradually pressed out beyond the economic margin. If it does more than that its place is obviously farther to the left in the supply schedule. The “expenses,” therefore, that we must assume to be covered by market price in the case of this firm — *and therefore in the case of all the others* — include not merely all direct and indirect costs of production and management, not only interest on bonds and borrowed capital, but also a sufficient return on common stock to maintain the value of the investment and attract further funds when necessary. This does not mean that profits (dividends) are to be classed as a “cost of production” — that would be quite incorrect, and in certain cases, illegal. All it means is that no firm which fails to live up to this requirement can maintain even a marginal position in the industry. We shall examine the nature of “profits” later on; for the present we need merely add that the position of “marginal firm” is not necessarily retained by the same concern over a long period; but that there will always be some concerns in this position.

§5. Firms in or near the margin are under severe pressure in competitive industry. The firms lower down

in the cost schedule are always threatening to capture their quota of the production; and we will conclude this chapter with three examples of this sort of competition among producers — one from agriculture and two from the most modern types of industry.

At this writing American wheat is offering in Liverpool at 59½ cents a bushel, Canadian and Argentine slightly lower. These are all large-scale producers; but in the Danubian states of Europe, where areas are smaller, tradition stronger, and labor superabundant, old-fashioned high-cost methods of production still prevail — as they do in many sections of the countries just mentioned. These differences in the costs of wheat production are enormous. A recent study of the United States Bureau of Labor shows, for example, that in the Western states modern methods of machine harvesting and threshing do away with from 97 to over 99 per cent of the labor required by hand methods. We must not assume, of course, that cost per bushel is reduced in the same degree, or that machine methods are everywhere used or usable. But the cost economies are so great that the pressure on high-cost producers is now very severe and is not likely to diminish. In America these economies, up to about 1920, had been largely concealed by the fact that they were offsetting the increasing-costs tendency resulting from expanding demand — exhaustion of the soil and resort to poorer lands. But since then demand has ceased expanding, and the result has been to throw 800,000 workers out of agriculture in the period 1919-1927. The high-cost areas in the United

States cannot be protected against this competition; but as between the low-cost countries of the West (and Russia) and the high-cost countries of Europe, an instructive situation appears. Putting the matter in terms of diagram I, we may say that the competition of the A to J sections is threatening the existence of the K to R sections. If the rule of uniform price prevails the producers at the right are faced with extinction, for the A to J sections can and will usurp their production quota. What have they done, therefore? They have tried to *prevent the rule from working* by excluding the low-cost wheat by tariff. Each nation (including the United States) has tried to fence off its own domestic market (and anything else it can get by bargaining); and we have therefore this situation:—

Confronted with the growing pressure of wheat from overseas, Europe has resorted during the post-war years increasingly to protection. Germany has raised her duties on wheat or wheat flour nine times since 1924; France six times; Italy five times; while imports into all the other importing countries of Continental Europe (except Denmark) are subject to some form of restriction. . . . So drastic has been the protective policy in France and Germany during the recent slump of wheat prices in the chief wheat markets of the world that domestic prices in these countries have actually risen, ultimately reaching a level more than double the corresponding figure in Britain. The actual figures for June 1931 were:—

Great Britain	38½	pence	per	bushel
Paris	99½	"	"	"
Berlin	87	"	"	"

Now whether this can last is only half the problem; the other half arises from the fact that several of these European countries are still growing grain that they hope to export! They all want to sell, but none want to buy; and each tries to sell *all* of its crop. But the price at which *all* the crop can move — the marginal price — is abnormally depressed by the very efforts of the high-cost areas to save themselves; so the fences cannot be really effective until production is drastically cut down to the limits of home consumption. If that happens, it may be possible to save the high-cost areas for a time, but only by means of a deliberate refusal to accept the benefit of cheap production. And it is questionable how long the world as a whole can afford that refusal. Of course the real problem is the displacement of labor and capital that free transit would produce. And what is needed is a means of tempering the speed of this displacement to a rate which will not exceed the rate of possible readjustment.

§6. A very neat example of the same problem arose about 1917 in the newsprint industry. Newspaper mills vary tremendously in size, capacity, and unit costs; and the producers, realizing that free competition meant the extinction of many high-cost concerns, arranged to mitigate competition by deliberately allocating contracts and customers among themselves, so as to prevent the rule of uniform price from working its effects on the economic margin. The secretary of the association was called before the Federal Trade Commission to defend

the system against the charge of violating the anti-trust laws. He stated quite candidly that a price high enough to protect the small concerns would yield "simply astounding" profits to the large ones; while if there were no restriction hundreds of small concerns would be ruined. As in most cases of the sort, however, the effort to stereotype the layout of the industry by means of non-competitive, differential price levels has not been successful. One of its almost inevitable results is the maintenance of surplus capacity; and a period of falling demand usually forces the low-cost producers to use their strength, whatever agreements may bind them. Several of the international combines operating on similar principles have met with precisely this difficulty.

§7. One more example will illustrate a different "marginal" policy. Radio is a very recent industry, and scientific devices are the very heart of it. The dominant electrical concerns in America — General Electric and Westinghouse, jointly controlling the Radio Corporation and its subsidiaries — have acquired nearly four thousand patents in the short life of this prodigy. But they have not used these to prevent other manufacturers from entering the field. Instead they have licensed their competitors to use their patents; but in the absence of any check on the royalty payments (percentages) demanded, or the minimum annual payments required, this has meant that the licensing firms on the left of the supply schedule have been virtually in a position to determine the height of the marginal por-

tion of the supply schedule; and maintain market price at a level much higher than it would otherwise be, with very satisfactory results to themselves. This is a situation that ordinary economic processes cannot correct because the patent system is the creation of law, not of economics. It would appear therefore that law rather than economics must find the remedy.

XIV

DIFFERENTIAL GAIN

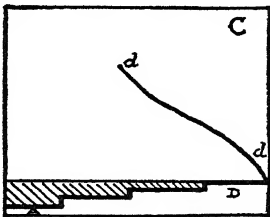
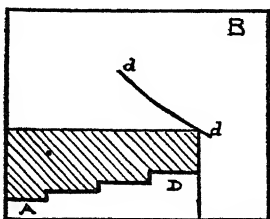
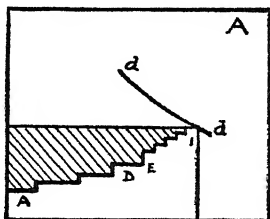
§1. Let us now take stock of our position. We have surveyed our want system, discovering a good deal of inertia in the "standard of living" as a whole, and in the great groups of demands that compose it. Certain permanent factors make for expansion, but work slowly enough to be in large measure predictable. But within each great group of demands, and on the fringes of each group, is a good deal of instability; and demands for specific things are often highly elastic and subject to unpredictable change. Producers, we have seen, try to eliminate as much of the uncertainty as they can. The most familiar way is by advertising — not merely to expand sales, but to hold the buyer's affection and prevent him from deserting his first love as soon as some new "school-girl complexion" or "skin-you-love-to-touch" appears on the horizon.

But producers, as we have seen, do much more than this to mitigate the uncertainties of existence. They get their politicians to defend their particular stakes by interferences with the free course of trade. And they enter into treaties with one another to soften, or abolish, the force of competition between themselves. For al-

though it may be true that the low-cost producers in a given industry have something to gain by killing off the high-cost producers (especially in a decreasing-costs industry where demand is elastic), they can as a rule only secure this gain by letting loose competition with one another; and that may well be too high a price to pay. Now in manufacturing industries the usual situation is that the low-cost producers, contributing anywhere from 35 to about 80 per cent of the output, are relatively few in number, while the high-cost producers, each operating on a smaller scale, are far more numerous. Taking American manufacture as a whole, individually owned businesses in 1919 were 47.6 per cent of the total number, and corporate concerns 31.5; but the former accounted for only 5.7 per cent of the value output, the latter for 87.7 per cent. While it is not always true that the individual concern is the high-cost one, it is safe to say that most of the low-cost concerns are in the corporate group. And within this group, as we have seen (p. 111), less than one tenth of 1 per cent does nearly half the business. Accordingly, agreements or understandings of some kind are very common between the low-cost producers. But very seldom are these agreements aimed at the elimination of all high-cost producers, because it would be very difficult to secure this result while restraining competition among the expanding concerns themselves. In theoretical economics of the traditional kind, the assumption is made that high-cost producers are "in the

long run" eliminated by the flattening-out, through competition, of the supply schedule; but, while there is always a possibility of this process working out, the obstacles put in its way are now so considerable that the case for *laissez faire* has lost most of its validity.

§2. For see what is actually involved. We have a given demand, let us say, that is being met by a supply comprising low-cost producers A to D and high-cost producers E to I (diagram A). The low-cost producers are very comfortable with a price level that just covers marginal expenses. Now suppose A, B, C, D, decide to eliminate the rest. If they can do so *without expanding the present total amount of production*, they will reap a relatively small addition to their gains, as in diagram B (notice that A, B, C, D, have all expanded). But can they actually do this? It is very improbable. It is far more likely



that the competitive expansion of output will continue past this point, and end up by tapping demand at a lower level, as in diagram C. In this diagram we

have assumed that the expanded production of A, B, C, D, has lowered expenses for all of them. But notwithstanding this assumption, they are now much worse off than they were before. And it is the realization of this prospect by modern business men that encourages "live-and-let-live" arrangements in preference to efforts at complete monopoly or complete output control.

§3. A complete monopoly could arrest the process at the stage indicated by diagram B. That is, it could fix output at whatever amount yielded the *maximum net returns*. This does not mean that the amount would necessarily be small. With an elastic demand production would be large, because the lateral expansion of quantity would more than offset the fall in price. Further, with expanding demand it might turn out that supply prices fell faster than demand prices up to a point—assuming demand to remain elastic; and up to that point production would expand. But in no case would the price be as low as under a competitive system, with price determined on the marginal basis, nor the supply of goods as great.

§4. Cases of this sort, however, are rare outside the public utilities,—natural or desirable monopolies,—where the prices are regulated by public agencies. Complete monopoly is difficult and costly to achieve, and difficult to retain against substitute commodities and public and governmental opposition. The prevalent business policy is that of modified competition, as de-

scribed above. It is usually attempted by means of the circulation of standard "costs" through trade associations, and tacit understandings as to the area of competition. Depression periods make such control extremely difficult. But nobody wants to rely on depression periods for the normal functioning of the competitive price system. And in normal times this system is very far from working in the way pure theory supposes. It must also be added that, though complete monopoly of supply is rare, many high-cost producers have a partial or local monopoly which could be invaded by aggressive competition, but which does not offer sufficient gains to the invader to make such competition worth while.

§5. Lest it appear that this exposition places too much emphasis on differential costs in the supply schedule, a few examples may be added. They suggest that in the diagrams used the supply schedules are drawn too flat, rather than not flat enough. We have already encountered coexisting differences in bituminous coal costs ranging from \$1.00 to \$2.20 per ton, and in lumber from \$16.00 to \$32.00 per thousand feet. Beet-sugar costs in 1913 ranged all the way from \$1.60 to over \$6.00 per ton in California and from \$2.40 to \$5.60 in the Ohio-Indiana district. Minnesota butter in 1919 was costing all the way from $1\frac{1}{2}$ to $8\frac{1}{2}$ cents per pound. Cotton costs on 791 Southern farms in 1918 ran from under 10 cents per pound to over 50 cents. Costs of comparable kinds of canned salmon ran in 1917 from

\$2.50 to over \$10.50 per case. California crude oil in 1914 ranged from \$0.03 to \$1.96 per barrel. Copper costs in 1918 ran from under 15 cents to over 28 cents per pound. Thirty-nine book-paper mills in 1916 showed costs ranging from \$50.00 to \$85.00 per ton. In retail trade, some very interesting studies of Professor Secrist show variations in average costs from 1916-1920 for retail clothing stores per \$100.00 of net sales, ranging from about \$13.00 to \$27.00 in smaller cities, and \$17.00 to \$35.00 in the large ones. The investigations of the United States Tariff Commission provide abundant further illustration of the wide range in coexisting costs of production. They are thus summed up by Professor H. Parker Willis of Columbia:—

A few years ago we started on the theory . . . that we want a rate of duty equal to the difference between domestic and foreign average costs of production. We placed the administration of that plan in the hands of a tariff commission, which found the following interesting situation: there is a far greater difference of costs between our principal manufacturing plants and our poorer ones in this country than there is between our best or even our average manufacturing plants and the best or average plants abroad. In other words, the minor plant in the automobile industry did not need protection against the Opel Works in Berlin, but against General Motors. The small plant turning out paper did not need to worry about what was being done in Quebec, Newfoundland, or some similar place, but the thing that bothered it was the price made by the International Paper Company. That being the case, the urgent question is, Who

is it that is being protected under our tariff? Of course, the business now protected is the inefficient plant. Our duties are at a level which is sufficient to take care of the interests of the least efficient plant in the business, or nearly the least efficient.

The newspapers often sneer at manufacturers who have gone to Washington and formed a kind of "bread line" at the Ways and Means Committee offices to ask for duties. I do not sympathize with that attitude; on the contrary, I weep with the manufacturers. I do not think they are exaggerating when they say they are losing money and everything is going to destruction in their plants. They have often been carefully selected as representatives of inefficiency. I think they are usually telling the truth, and they get what they want; that is, they get a rate of protection which enables them to stay in business. They then stay in business because the strong, well-organized plants need them as examples.

I said to a large manufacturer not long ago, "Why do you keep up your prices as you do — you are making plenty of profit." "Well," he said, "I don't think it would be professional for me to cut them. Many establishments in the business would not like it if we were to cut these prices." I said, "You are not altogether a philanthropist; you have n't been working along that line." "Well," he said, "we have a code of business ethics which makes it undesirable for us to drive anybody out of business."

The significance of this, for our present purpose, is not the effect of a "cost-of-production" tariff policy, but the existence, and persistence, of very wide variations

in domestic costs of production. The survival of high-cost concerns is, as has been said, due in part to the fact of local monopoly arising from geographic or other conditions. But it is also true, and on the whole more important, that low-cost concerns are not as anxious to push competition to extremes as traditional (Anglo-Saxon) economics assumes; for the fact is that *differential gains, rather than monopoly gains, are the main source of business fortunes.*

§6. The traditional theorem of competitive economics is that "in the long run" price equals cost of production. To the question, "Whose cost of production?" the orthodox answer is in effect that there is a constant tendency toward the flattening out of the supply schedule through the competitive elimination of high-cost concerns. That such a tendency exists nobody will deny; we have devoted some space to illustrating its operation in the case of coal and grain. But we have also discovered a negative inertia, and a positive resistance to it, serious enough to invalidate the *laissez faire* corollary of competitive economics; and the evidence available suggests that this flattening out of the supply schedule is very incompletely realized in fact.

The significance of this result may be indicated at once, though it will be clearer later on. So long as price is maintained at the marginal level on a steeply graded supply schedule, society is wasting a lot of economic incentive that is not necessary to continued production. For, by hypothesis, the marginal firms are receiving

enough returns to stay in business and continue production; therefore the sub-marginal firms are receiving a surplus that is not needed to secure their contribution. Of course, in practice this surplus is usually "capitalized" in expanded security issues on which the *rate* of return is apparently not abnormal; but the question remains whether society can afford to contribute more purchasing power (tickets) to any group of producers than constitutes a necessary incentive to call forth their contribution to the heap. Or, putting it another way, can the distribution of purchasing power possibly suffice to move *all* the goods in the heap so long as a great deal of it goes as waste incentive to certain fortunate groups of producers?

It is impossible to answer that question at present. We are not sufficiently equipped. We must look more closely at the people "going from the heap," studying them now according to the types of income they receive. And as our first type of income we will take the most conspicuous case of differential gains known to economics — the case of "rent."

PART IV

SHARING THE NATIONAL HEAP

XV

OWNERSHIP INCOME: RENT

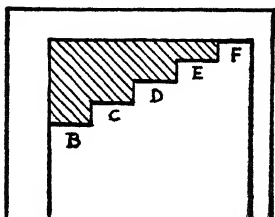
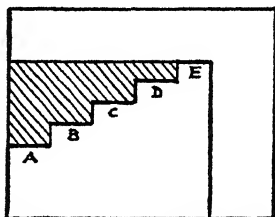
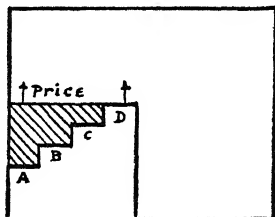
§1. Economics gives the name *rent* to all differential gains which are a consequence, not a cause, of the price level. But it usually distinguishes between cases in which the differential gains arise from natural and permanent causes and those in which they arise from human and temporary causes, calling the former true rent and the latter quasi rent. This distinction, like most others, gets blurred in practice.

At the close of the Napoleonic Wars, English land rents were found to have risen by about 70 per cent. Why? Because the interruption of imports had caused a great increase of demand for the produce of English farms; and this increase had been reflected in very high prices, particularly for grain. The high price level brought certain facts into prominence, which were duly noted by the economist Ricardo. The amount of good land is limited; but this would not matter if the yield of it could be indefinitely increased without increasing the unit costs. This, however, as we have seen (Chapter VI), is not the case. So poorer lands were brought into cultivation; and with every extension of the margin of cultivation, rents (differential gains) rose higher.

Under a competitive system with private ownership of land, it was all the same to the farmer whether he worked the poorest land for a bare living and paid no rent, or whether he worked better land and paid over the differential gain — arising from the lower costs — to the landlord; and he could be forced to do this latter because of the limitation in the amount of the better land. As the end of the war approached, landowners were worried as to what would happen to rents and land values when the seas were opened again. So Parliament (which they controlled) put high duties on foreign grain — the famous Corn Laws — to protect them. Ricardo did not like this system. He thought it very injurious to the community “that by prohibitions against importation we should be driven to the cultivation of our poorer lands to feed our augmenting population.” He saw that, apart from all war and blockade, the growth of population constantly tends to increase the demand for produce and so raise rents. And John Stuart Mill emphasized this fact, pointing out that the mere increase of society enriches the landlords: “They grow richer as it were in their sleep, without working, risking or economizing. What claim have they, on the general principle of social justice, to this accession of riches? . . . No man made the land: it is the original inheritance of the whole species.”

§2. Whether land ever was, in the historic sense, the “inheritance of the whole species” is a very debatable question. But even if it were, the differential gains

would still be there because the differences of soil fertility, and therefore of costs, would still be there; and the only matter for decision would be, who gets the benefit? Under private ownership, the landowners get the benefit; and, since this benefit is hotly contested by various schools of thought, we had better make our examination of it more specific. Suppose, then, we have farmers A, B, C, D, with D just able to make a living at the prevailing price of grain, and the remainder in receipt of various differential gains, as in all supply schedules. Then the price level rises owing to an expansion of demand. What happens? It is reasonable to suppose that they all increase their production by more "intensive" cultivation. But they find their unit costs rising too (actually they need not find



anything of the sort for some time to come if they are well trained; but they cannot postpone the rise forever). How much will they increase production? Well, obviously they will stop short of the point at which their differential gains are no greater than before; and D will

for the first time be able to obtain a "rent." This lets E in — E being the "extension of the margin" into new "no-rent" land.

§3. As a matter of fact there is now no such land. The productive part of the public domain is all appropriated, and for the use of any land at all a so-called rent can be exacted. But this is not a true rent; it is a monopoly price, comparable to a patent royalty. And its exaction is possible only because nobody can create any more land. This element of monopoly price enters therefore into all commercial rents because of its effect at the margin; and as population grows this element grows too, along with the general rise in true rents.

§4. Let us continue the story. The urban district is growing, and A finds that he can secure a still higher return from his land by diverting it to truck farming. Exit A from the grain business. Now we must readjust the supply schedule; B, C, D, will obtain higher rents, E's land will have a rental value for the first time, and a new marginal F will appear. In other words, the most productive *alternative* use of A's land has affected land values all through the area. This is really a special case of the *rule of balance* encountered in Chapter XI.

This rule of balance plays an important rôle in the history of the American frontier. The existence, since 1862 (the Homestead Act), of land that could be had practically free for settlement set a downward limit to the level of wages in urban industry (allowance being made for the costs and risks of movement). And it is

only since the disappearance of the frontier that a real proletariat has arisen.

§5. The existence, and more especially the increase, of these differential gains on land ownership has attracted a great deal of attention to them. The most conspicuous cases have arisen, however, not in the farming sections, but in the towns. When it is said that land values are the basis of nearly 90 per cent of the great American fortunes, it is urban-site values, not farm values, that are referred to. An authority has calculated that every baby born in the city limits of New York adds over \$800 to the total value of the real estate. The same authority states that in the decade 1898-1908, the total value of New York real estate increased by five billion dollars—262 per cent. It is to gains of this sort that Mill's famous sentence applies with greatest force.

Accordingly, there have been many schemes for a "socialization" of this sort of differential gain, all resting primarily on the contention that, since it is really created by the expansion of the community, it should be claimed by the community. The doctrine of Henry George (1839-1897) was and still is the most famous of these. George, in *Progress and Poverty* (1879), focused much earlier thought on a proposal that the State should reclaim, by taxation of land values, all true rent. Since rent by its nature is *not* the reward of effort, but of mere ownership, no harm would be done to production incentive; and such a system, George argued, would yield a revenue more than sufficient to replace all other

forms of taxation. Hence the term "Single Tax" applied to it.

§6. The objections to this programme are on the whole empirical rather than theoretical. They do not impugn the essential soundness of the argument on which it rests. But the argument demands, first, that it be possible to distinguish true rent from other forms of land income — or (what comes to the same thing) pure site value or unimproved value from other elements of value arising from the efforts of present or past landowners. In the case of urban land this is quite possible. In England the payment of "ground rent" separately from the commercial rent (that is, hire) of buildings is usual, owing to the forms of ownership; and some American cities and states make separate assessment for tax purposes of "improved" and "unimproved" values. Pittsburgh in 1913 adopted a policy of shifting, by carefully graduated stages, the bulk of real-estate taxation from the "improvements" (buildings and so forth) to the site values, and the results have been on the whole very satisfactory. With agricultural land the matter is much more difficult. Some economists have maintained that the whole value of agricultural land is really a return on funded human effort; and to separate those elements of land fertility due to nature from those due to man may well involve somewhat arbitrary judgments. The task is not impossible, as the experience of New Zealand shows; but the application of the policy in a retrospective sense is at-

tended with serious difficulties which do not arise when it is applied only in a prospective direction.

In some cases even urban land taxation meets with a similar problem. That rental values are anticipated in the capitalization of real estate is a merely incidental objection. But there is some substance in the case where site values have been deliberately created by means of investment and development. Even here, however, it can hardly be maintained that the *entire* land value is the result of the investment and that the social community plays no part at all in its creation. These and similar difficulties suggest that land-value taxation cannot be pressed to the theoretic limit without injustice; and they are usually allowed for in practice by the exemption of minimum amounts.

§7. Current schemes embody two distinct methods: the method of a general tax on all unimproved land, either flat-rate or graduated; and the method of taxing future increments of value which are not due to the effort of the owner, usually on a graduated scale. The British scheme originated by Mr. Lloyd George in 1909 combined both methods. New Zealand and the Australian states have relied mainly on the former, though the Australian Commonwealth added the latter principle for federal purposes. German cities have used mostly the incremental basis. Further progress in the adoption of the fundamental idea is certain as an alternative to the policy of land nationalization. Henry George did not advocate this policy. He believed that

private ownership calls forth private initiative and contributes to the development of social resources; and he desired that human effort, on the land and everywhere else, should be relieved of much of its present burden of taxation. But he also believed with passionate sincerity that society cannot afford to allocate an increasing proportion of the goods in the heap on a non-functional basis. And in this experience confirms him. It becomes more, not less, doubtful as time goes on whether, so long as a large proportion of the national income is so allocated, the "tickets" that actual functionaries receive are adequate to secure either a complete or an equitable distribution of goods.

XVI

OWNERSHIP INCOME: PROFIT

§1. As we have abundantly seen, land is by no means the only connection in which differential gains arise. Economic life is shot through with them from top to bottom. Two laborers do the same work for the same pay, but one can do it with much less effort than the other—he gets a differential gain, a rent, arising from natural strength or aptitude. Luck and opportunity in both individual and corporate activity bring differential gains to fortunate persons; so do changes in community habits and industrial techniques. Land rent appears a special case only because it rests on more permanent differences than other types and on a more definite limitation of the low-cost sources of supply. And, we may add, because it is usually reckoned on a contractual basis which enters into producers' calculations as a cost.

This point needs elaboration. Rent, as we said in Chapter XV, is a consequence and not a cause of price. Theoretically, therefore, the true rental value of land fluctuates with the yield (in practice, the value) of its produce from season to season. But actually tenants

contract in advance to pay the landowner a certain "rent," usually for a considerable time to come. They do this because they desire security of tenure; and also because they hope that the rent they agree to pay may leave them with some part of the differential gain for themselves; it will appear as an addition to that part of the yield which they do not pass on to the landlord, and they will call it "profit." But in ordinary business *all* differential gain appears in this guise, and all goes by the name of profit. Neither the actual laborers nor the consumers agree in advance to pay over the differential gain of a low-cost concern to the owners (stockholders); and so the receipts of the owners reflect without disguise the fluctuations of differential gain from month to month and year to year — just as they would in farming if all land were farmed by owners and all farmers were paid on a contractual basis. Then probably the landowners would cease talking about rent and talk only about "profit."

§2. Whether the economists would be pleased if they did is very doubtful; for no term has given more trouble to the economists than this term "profit." Let us first set down the one point on which they are all agreed — that the essence of profit is its residual, non-contractual character. The accountants would add that profit is the residual return to ownership arising from the differences between gross receipts and total expenses of production — including labor, materials, maintenance, managerial and all other salaries, interest on bonds

and borrowed funds, and everything else of a contractual nature.

But the fact that profit is residual in character does not preclude its being the reward of some kind of effort or sacrifice. What kind of effort or sacrifice — if any — can it be the reward of? We have accounted for the reward of everybody who is doing anything on the job: the laborers get their wages, the machines get their depreciation, the landlord gets his rent for the factory, — even though he does nothing except oblige us by owning the land, — the bank and the bondholders get their interest, the board of directors (let us assume they all do something on the job) get their salaries. Who is left out? Ah, the stockholder! And what does he do? He owns the business. Is that “doing something on the job?” John Stuart Mill did not think the landlords did anything — and in the case of some hereditary landlords he was certainly right. Does our business owner do anything? Let us state a case for him. We will assume for the moment he is not a hereditary stockholder; that will make things easier.

§3. The stockholder, like any other proprietor, bears the ultimate risks of the business venture; not merely the ups and downs of its financial fortunes, but the risk of its inception in a competitive world. He “put up the money.” Not all of it, necessarily. There may be bankers or bondholders who lent money at interest; but they have not only a contractual claim to payment, they have a lien on certain assets which, in the event of

its failure, may be worth something in another connection. Not so the stockholder. If the estimates of earning power which underlay the capitalization were wrong or dishonest; if unforeseen changes of demand, or new channels of supply, alter the business horizon; if the concern is mismanaged, or general purchasing power breaks down — then the stock which he holds may become worthless, and that will be the end of his investment. Did he do us a service then in choosing our concern for his money? He did. We were in competition for it with hundreds of other concerns offering various degrees of risk and various temptations to acquisitiveness. Further, all these concerns together were in competition with banks and government securities in which the degree of risk is practically nil — in fact, with the whole of the investment opportunities that collectively affect the division of purchasing power between saving and spending. And whether or no we consider ownership as such a productive function, the fact is that we must offer prospective owners the equivalent of non-risk interest and a compensation for risk in order to start and keep our business in operation. The same is true even for individually owned enterprises. Here we make our first annotation to the term “profits.” Profits as ordinarily understood includes elements of “imputed” interest and risk compensation. It was for this reason that we allowed our marginal firm in Chapter XIII to make a minimum rate of “profits” covering these items.

Any system which tries to dispense with profits will

therefore have to devise some substitute for the profits index to determine the allocation of investment funds among alternative possibilities. It is not inconceivable that this might be satisfactorily done in a strictly limited economy by the decisions of expert committees; but whether in an economy like our own, with its thousands of alternative lines of production and its incalculable chances, the judgment of a few people could be entirely substituted for the collective judgment (or guesswork) of the many is open to serious question.

§4. This risk theory of profits must not, however, be pressed too far. How much real "risk" is involved once the investor has received in dividends the amount of his original investment plus bank rate of interest? Further, though the owner is the ultimate risk bearer, he is not the only one. All employees stand to suffer if the business does not prosper; and those who lose their jobs may have great difficulty in finding other opportunities within the productive system. The longer they have held them the graver this risk will be. That is a risk they bear without insurance, without specific or imputed compensation; and the burden of it may be graver to them than the burden of his risk to any part owner. We need a further annotation of the term "profits." We must distinguish between risk, strictly so called, and *uncertainty*; and we must allow to profits an element of inducement, additional to those we have enumerated, offered to those who will accept returns of an uncertain, non-contractual, residual nature instead

of the contractual returns represented by all fixed-interest securities.

Is the uncertainty considerable? It most decidedly is. Here is some evidence for judging it:—

PERCENTAGE CHANGE FROM YEAR TO YEAR IN AMERICAN
CORPORATION NET PROFITS

	1926-27	1927-28	1928-29	1929-30	1930-31
Coal Mining	-41.7	+ 1.2	+18.6	-17.0	-39.9
Petroleum	-51.4 _b	+96.2 _c	+16.2 _a	-49.5 _e	-97.9 _f
Wool	—	+	—	—	+
Tobacco	+ 3.86	+ 3.0	+11.6	+ 7.7	+ 2.4
Iron and Steel	-25.5	+33.5	+66.4	-54.2	-99.9
Building Materials	-15.6	- 5.8	+ 3.0	-40.1	— ^f
Machinery	-14.2	+12.7	+32.0	-59.4	— ^f
Agricultural Implements	+21.2	+24.9	+27.9	-34.0 _e	-99.7 ^f
Cotton Mills	+	-78.1	+ 6.6	— _e	— ^f
Automobiles	+24.5	+18.4	- 7.5	-56.0	-38.7 ^f
Meat Packers	-48.5	+99.2	- 7.7	-23.1	— ^f
Food Products, Misc.	+ 0.12	+19.4	+ 5.3	-22.2	-33.9
Amusements	+15.2	+32.7	+80.7	- 0.6	-69.6
Railroads	+11.8	+ 9.9	+ 6.7	-42.1	-70.0

^a Deficit in 1926

^b " " 1927

^c " " 1928

^d Deficit in 1929

^e " " 1930

^f " " 1931

The point of the illustration is this. Even if we take the safest concern we can find, the actual rate an investor can count on receiving may vary within tremendously wide limits in very short periods. This uncertainty is non-insurable; and it calls for some inducement even in countries that are periodically subject to a gambling mania.

§5. Until quite recently there were two functions the profit receiver was supposed to perform in addition to

the provision of capital and the shouldering of risk and uncertainty. He was supposed to perform the functions of organization and of management. Organization means the assembling of the factors of production in a "business proposition." It is work now done in the main by bankers and promoters who take their reward in many other ways than continued proprietorship; and the reward seldom errs on the side of modesty. Of management the modern stockholder performs as little. Much stock that is most widely distributed is non-voting; but even the holder of voting stock lacks nowadays knowledge, opportunity, and desire to exercise any managerial function. Management of a concern, in the specific sense, is done entirely by salaried people; and its policy, in the larger sense, is determined by smaller and smaller groups of individuals who are in positions of authority which do not necessarily involve large investments in its ownership. The modern stockholder is much more like an absentee landlord than he is like the *entrepreneur* of classical economics.

§6. And when all the imputed functional elements are allowed for in profits, there remain the differential gains which are analogous to economic rent. The differential advantages on which these rest are of the greatest possible variety. Goodwill, for example, is one of them—a reputation for good service and probity built up through a long business practice. Patent monopoly is another. Fortunate location is a third. Sheer luck in the discovery of either productive methods

or business talent is a fourth. Honest efficiency, patiently pursued and finally achieved, is a fifth. Devices for restricting competition, controlling the market, exploiting the consumer, are legion. No generalization can be made about all of these. Business goodwill is like the improvement of farm land by generations of careful husbandry; it is certainly entitled to a reward, and no one can say arbitrarily how much. Efficiency is again like scientific farming based on knowledge that has taken time and effort to acquire. Other methods are modern forms of privateering. All alike get their high returns through the residual claims of ownership.

Some people to whom these returns seem in the aggregate out of all proportion to the functions performed advocate the recapture of a part of them by a steeply graduated taxation of corporate net income. They think this might be a more useful, and less painful, procedure than a more steeply graduated taxation of personal income. Other people are for a much wider diffusion of ownership — not necessarily by the sole means of pecuniary investment — so that all functionaries, or all consumers, might share in the residual gains which any economic system must produce. Other people are for abolishing the profit system altogether. These think the profits index a totally inadequate guide to what is socially desirable in economic effort, and consider that ways could be found for allocating investment funds in production without supporting a large class of

XVII

CONTRACTUAL INCOME: INTEREST

§1. WE are now to consider the nature of the returns to capital as such, as distinct from the returns to ownership as such. The ultimate difference between them consists really in the method of computation and payment. The returns to ownership are residual in origin. The returns to capital, apart from the risks, responsibilities, and uncertainties of ownership, are contractual. When the bank accepts our money on time deposit or savings account — sometimes on current account also — it promises in advance to pay a stated rate of interest. It alters the rate from time to time, but always in advance. When we buy bonds we get a similar, but much longer, guarantee of a stated rate of interest. But where does the bank or the corporation get the funds with which to pay us our rate of interest? The bank gets those funds (and a margin for itself) by transferring the purchasing power we have entrusted to it to the hands of ownership, — very likely the same hands we should have trusted if we had bought bonds direct, — where it will be used to produce goods or services that have value; where it will aid in bringing some contribution to the national heap. The goods or services that it is specifi-

cally devoted to may be merely instrumental in character — machines, factories, railroad track, or what not; but these things will have value only in so far as they achieve their purpose of producing something you and I want to use, or “consume.” If they fail in that, they lose their value. So that the only source from which interest can be paid is the stream of consumers’ goods going into the heap; there is no other source whatever. If you and I do not want those goods when they get to the heap, or if we have not enough tickets to acquire them, then the source of interest payments will dry up and banks and corporations may be ruined in attempting to keep their engagements. Similarly with owners in general. Under the same circumstances, differential gains will shrink and some will disappear. And even landlords whose differential gains are translated into the contractual terms of commercial rent may find that their rent is not being paid — for the fundamental reason that it has *ceased to exist*.

When we have said, however, that the flow of consumers’ goods to the heap is the only source from which interest payments can be made, we have not explained why they should be made at all. We allowed, in Chapter XVI, our marginal firm to make a “profit” equal to at least the going rate of interest — apart from all risk bearing; and we used this as a datum line from which to reckon differential gains. But the only reason we advanced as to why this rate must be allowed was the *de facto* argument that without it the business would

eventually fail because its supply of capital would not be maintained. We must now look into the matter more closely.

§2. First let us be clear about our terms. Capital, in current usage, refers to monetary amounts. But these amounts are merely measures of the estimated earning power of certain "assets"; and so the term "capital" really refers to instrumental goods of a more or less durable nature (the periods vary) which are devoted to the production of final utilities, or income. The goods are not all tangible ones. For example, the "capitalization" of a business — the total par value of all securities outstanding — may well exceed the sum of the values of all its tangible assets. This is because the business *as a whole* is more than the sum of its parts; the "organization," the conjunction of all those parts, is itself a productive good, and is usually in fact the basis of industrial stock. But the value of all assets (including the organization) is merely derivative in character — derived from the demand for the final product; and, as we have seen, resources tend to distribute themselves between various lines of endeavor so that their costs are covered. If mistakes are made, owners of the resources — and people who have lent money to those owners — will suffer.

§3. By interest we mean a premium paid for the temporary use of another's purchasing power. Interest appears in practice under two forms. When a person borrows from a bank, he usually signs a promissory note

for the amount of the loan. The bank then gives him, either as a deposit on its books or in cash, not that amount, but an amount diminished by the interest charge. This is called *discounting* the note, and interest reckoned in this fashion (as it is in all commercial transactions) is called the *rate of discount*. But when we lend money to a corporation or a government in exchange for a bond, or some other token of funded debt, the interest is paid as an additional amount to the sum ultimately due, and it then goes by its proper name.

§4. Now, though it seems obvious that a premium should be paid by any borrower to any lender, it was by no means obvious before the capitalistic age; and our first task must be to inquire *why* interest must be paid. There are several reasons, which have been developed by various schools of thought in a voluminous literature.

First, the lender — whether or not he needs for his own use what he lends — parts not merely with the thing or the amount itself, but with the control over it. And, aside from all risk, people demand some compensation for this temporary loss of control.

Second, an important psychological fact: we instinctively discount the future. If you have to have a tooth extracted in four weeks' time, the anticipation will not seriously overcloud your day now. The event is "too far off to worry about." But as the time draws nearer the depressing effect will become more and more perceptible, and the eve of the ordeal may be sadly overcast

by the fate that is upon you. Yet the extraction has not become a more painful thing in the meantime. It is just the same event as it was four weeks ago. Its psychological value has changed. Four weeks ago your mind discounted it, very much as the bank discounts a note. The same is true of pleasures. Ask a child how much candy he will have to-morrow instead of a pound to-day, and you will get a measure of the child's psychological discount rate. So it is with things lent. The same thing (or amount) a year hence has not the present value of that thing to-day. And in order to exchange the distant thing for the near one, some inducement has to be offered.

A third reason sometimes advanced for the existence of interest is the so-called "service of waiting." But waiting resolves itself into the two factors above given; apart from these the notion has no effective content, so we need not count it as a separate item. The idea of risk is sometimes brought into the argument. But compensation for risk is not true interest, though a compensation is frequently paid in the form of an addition to the rate where genuine risk exists. We must bear carefully in mind that loss of control is not necessarily acceptance of risk. There may be just as much risk involved in the lender's retaining his own property or his own funds. Millions of people leave their money in banks without getting any interest at all simply because they think it is safer there than it would be in their own keeping; and those who do get bank interest do not

think of it as compensation for the risk they run in letting the bank take care of their money!

More importance attaches to the idea of *abstinence* from immediate consumption. A good deal of fun has been had at the expense of this idea. People with million-dollar incomes, it is rightly pointed out, do not "abstain" from much consumption in order to provide capital for the enterprises of the country. Nor, we may add, are they very subject to the psychological-discount process. To them the marginal utility of goods, or money, is low enough so that they may even prefer future satisfactions to present ones; though it does not follow that they will part with the *control* of any of their purchasing power for nothing. But in regard to abstinence it is true that at any given rate of interest there will be some people whose division of their funds between saving and spending is affected by the size of the inducement offered. And any given volume of loan funds will therefore necessitate a rate high enough to affect these people. This is the familiar marginal principle of price making in which interest appears as the price of capital. And, as in earlier marginal analysis, it is evident that many lenders get a differential gain because of the marginal portion of the supply. In other words, a great deal of loan capital would be forthcoming at rates lower than those which actually prevail; but not quite all the actual supply.

It is questionable, however, how important the marginal principle is in regard to the supply of capital

as a whole. That supply comes ultimately from amateur lenders like you and me who put our money into banks and insurance companies, or buy securities. Institutional and social factors probably affect us at least as much as the refinements of marginal calculation, or the rule of balance. But in the operations of professional lenders (bankers) such calculation is extremely important; and in regard to the distribution of capital between various types of loan and the movement of capital from country to country, the rate of interest is an extremely sensitive, and extremely effective, determinant.

The institutional factors become evident if we alter our perspective a little. The reasons why interest must be paid, which we have been discussing, all bear on the question of people's *willingness* to save; and when we put the matter this way some further reasons come into view. An absolute psychological factor is involved which may vary from nation to nation. It may also vary with circumstances; and by far the most powerful and most familiar circumstance is economic insecurity. Ordinary people save to secure a future income against the time when their productive energies may be impaired or exhausted. Of course, saving is not the only way in which a future income of this sort might be secured. Old-age pensions, for instance, suggest an alternative way; and in countries where the mass of people cannot hope to save, alternatives of this sort are now widely in use. But so far as individual saving

is relied on, people who aim at a definite amount of income will obviously have to save more, not less, the lower the rate of interest is.

The question of willingness to save suggests the still more important question of *ability to save*. The usual statement made in this connection is that the supply of capital depends on an excess of current production above current consumption. But this is not quite adequate. The excess production must be acquired by individuals, must be bought, before it can be transformed through the money medium back into capital. Unless consumers have purchasing power enough to appropriate current production, an excess of goods will not produce a supply of capital; instead it will impair the value of the existing amount and bring the production process — the earning process — to a standstill.

§5. Having now seen why interest must be paid, let us ask *how* in fact it is possible that interest shall be paid. Borrowers, we have seen, must for various reasons undertake to repay a somewhat larger amount than they have borrowed; but how is it possible for them to fulfill their undertakings? On this matter there is a wide consensus of agreement. The answer is that by capitalistic methods of production a surplus of goods is created above what would have been produced without any capital, or (theoretically) without as much capital as was actually available. Let us see what capital does. It enables labor of all kinds — including management and supervision and expert estimating — to be maintained

through long periods in advance of the production of consumable goods; and in these periods labor can devote itself to the creating, and maintaining, and replacing, of the most elaborate tools and equipment. With all this equipment a given amount of effort is far more productive than it would be without it; and it is capital that makes this equipment, and therefore this surplus, possible.

§6. This is the orthodox explanation. But on no question of economics is caution more necessary. For no portion of economic theory is more hotly contested — in argument and sometimes in physical force — than that which deals with the nature of the rewards to capital. Does capital really perform a productive function? Does it really create anything new? All the effort involved in producing goods is actually remunerated, once the system is in being, out of the current flow of goods, not the future flow. The laborers who dig the ore, the transport workers who bring it to the furnace, the toilers who convert it into metal, the scientists who test it, the designers who make the patterns, the moulders and casters who fashion it, the supervisors who direct these processes — all are receiving from current production a return for their productive effort or sacrifice. And the total of these returns must surely equal the total of values produced; how else can the goods be sold? The final upshot of all this effort and sacrifice is a continuous stream of finished goods coming to the heap, — food, clothing, tobacco, movies, books, news-

papers, sermons, songs, pianos, radios, automobiles, houses,—all of which *must* be appropriated. If they are not, the whole system will slow down and stop. Everything must be “consumed”; that is essential to the continuance of the system. Total demand *is* total production. What, then, is all this talk about abstinence from consumption? Where *can* “capital” come from?

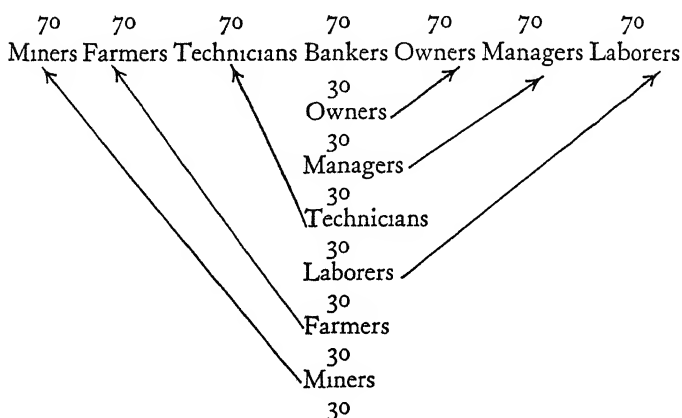
Let us reduce the matter to its simplest terms and see if we cannot break through the vicious circle. We will suppose that we have seven consumers, or types of consumers, to deal with, and that each is receiving (no matter whence) \$100 a week. Then all the goods must sell to all the consumers for \$700, because that represents all the tickets that are available, and there is nobody else to buy. Who are these consumers? Let us stand them in a row and take a look at them:—

Miners Farmers Technicians Bankers Owners Managers Laborers

Yes, the owners and the bankers are in the line—even owners and bankers must live. Now suppose each one of the group, instead of spending his hundred dollars all together, decides to “invest” thirty, turning it over to the banker. The banker makes the same decision as the rest, handling \$30 of his own money as a banker instead of as a consumer. Now we have a pool of \$210 for investment and \$490 for goods. Where does the investment pool go to?

It goes into “production.” The banker offers it to the owner, who uses it to buy more raw materials from the

farmer, more coal from the miner, more skill from the technician, more supervision from the manager, more toil from the laborer. Why, these are the *same people!* Yes, but in a different order. They are now lined up vertically as producers. The complete picture is like this: —



The banker keeps \$30 of the investment pool as his commission, the owner advances \$150 to the producers, and has a residue of \$30 for himself. And all of this reappears as income. Apparently the consumers who invested their money are lending it *to themselves* as producers! And that is what the nation as a whole is doing all the time. It is lending money to itself.

But we have not allowed our consumer-investors any interest. Why should we allow them any interest? And how? Because, as a result of this redistribution of their income, the total of goods next year will be 714

things instead of only 700; so we can pay each of them \$2.00 reward; in other words, a rate of just over 6 per cent. This interest would not be earned, and therefore could not be paid, if they had not been willing to *divert* part of their demand for finished goods back through the production process. It all reappears as demand for finished goods; but in addition it makes possible an increment of finished goods with an increment of demand to buy them. For notice what the banker is doing: *he is financing production ahead of current demand and creating purchasing power to meet it.* That is his function, and we shall study him at work presently.

If we suppose the above case to be an original investment, so that the pool of \$210 was all the capital in the community, we can see the importance of this diversion of income to capital uses. For if the consumers were unwilling to make their investment, they would not get organized in the vertical sense at all; and, so far from producing their current incomes, they might produce even less than a bare subsistence. This will be true in any society. Suppose all food producers are organized in a state trust; does the state trust allow them tickets enough to buy up all the food they produce? Of course not; it sets aside — by various accounting methods or by taxation — a certain share to go to the producers of instrumental goods in order that the production may be kept at its present level.

§7. Now we must make three very important modifications in our parable to bring it nearer reality.

The first modification: The investment we have pictured will not, of course, be an original investment. Actually we have a tremendous volume of capital goods in being. They are represented by claims of ownership, and claims of lenders; and these claims in effect are merely titles to income. It is the income returns to owners and lenders that really figure in the economic system, because *the total capital claims cannot be realized*. If everybody tries to withdraw his capital, the capital will disappear! It will be like a run on a bank magnified a billion times. The capital values will simply cease to exist *because* the organization will break down. This was one of the reasons why at the start of this book we chose national income statistics rather than "wealth" statistics. To make our parable fit this fact we should assume that the thirty-dollar investments have all been made in the past, and that consumer purchasing power is represented by 7×70 plus the incremental payments: the thirty-dollar investments are merely claims to certain types of income. Then our system can keep going without running into a surplus or a deficiency. There can of course be a lot of buying and selling of these claims to income in which some gain and others lose. There can also be incremental investments of the type we outlined. But there can be no general realization of all capital claims; chaos will break loose if it is even attempted. To call the total of these capital claims "wealth" means nothing more than that the nation is organized for production in a

certain way. No cash value of that fact can be realized except the value of the stream of finished goods that it produces — that is all the “value” there is.

The second modification: The kind of loan investment our parable suggests is a loan to provide *working capital*, and plenty of loans are of this sort. They simply carry the actual producers through the time period involved between the production of raw materials and the realization of final values. But our parable would equally apply to investment in *fixed capital* — railroad track, new factories, new machines, and so on. The “fixity” is merely relative: all these things wear out, none of them last forever, and most of them get obsolete before they are physically used up. To allow for this, industry makes continual appropriations called “depreciation” — in the case of mines “depletion” — on an annual basis. The estimated replacement cost of plant is divided by the number of years the plant is expected to serve, and so much is carried forward year by year as a *cost* item into the prices of finished goods. This is a way of securing from the prices of final products enough purchasing power to pass on to the workers on instrumental goods, so that their labor may maintain the plant in continual efficiency. No investment is involved here. But needs for better plant, or more extensive plant, also arise owing to the dynamic factors we have previously noted; and these needs may be taken care of in two ways. Out of the residual gains called profits, a reservoir (surplus) may be accumulated from which the

necessary payments can be made to producers of instrumental goods when the time comes. That is, instead of all profits appearing as distributed income, some portion is held back and eventually invested by the firm itself. In this method the new investment is frequently represented by new stock distributed to the owners, who would otherwise have received higher dividends. So in principle it does not differ from the procedure in which all profits are currently distributed as income, and then the receivers of it are asked to turn some back into production by making a new investment. Of course, the case is very different when stock dividends are handed out merely by way of capitalizing (and disguising) abnormal rates of profit without any new instrumental goods being created at all.

The third, and most important, modification: In our parable we assumed that all the investment going into the production process reappears as purchasing power for current goods. It is called investment merely because it is distributed in a certain way; but all of it, to whatever kind of work it was devoted, and including the residual share of ownership, reappeared in the parable as demand for finished goods. Now suppose it does not reappear? Under what circumstances will it actually fail to do so? Well, if we have a very great inequality of incomes (see page 44) it is more than likely that investment will be highly concentrated instead of—as in our parable—democratically distributed, and that some part of the investment income

will *never reach the consuming line at all*. Suppose the owners do not carry forward their investment income through bank deposits to demand for current goods, but turn it back again into the production process in a never-ceasing circle. Then there will be a chronic deficiency of purchasing power for the stream of finished goods. And when this closed circle of investment income and capital goods has revolved a long time, there will come a state of general crisis through failure of buying power. The very same process that speeded up the creation of instrumental goods will have made it impossible for the demand for finished goods to keep pace, and *therefore* there will be a general collapse in the value of the instrumental goods themselves. This may prove a partial corrective, though a painful one: it will forcibly cut down, or even annihilate, the real volume of investment and of titles to income arising therefrom. Plants will fall idle, enterprises go to ruin, farms decay; investment values will contract, and the stream of finished goods will shrink. But, owing to the breakdown of the production organization, purchasing power will also cease to be distributed as wages and salaries. And as that is the major means by which purchasing power is distributed in this system, it is unlikely that the crisis will cure the disease. It may well make it worse. At this stage governments may come along with proposals to create more purchasing power by enlarging credit, or even currency. But unless those proposals affect the *distribution* of purchasing

necessary payments can be made to producers of instrumental goods when the time comes. That is, instead of all profits appearing as distributed income, some portion is held back and eventually invested by the firm itself. In this method the new investment is frequently represented by new stock distributed to the owners, who would otherwise have received higher dividends. So in principle it does not differ from the procedure in which all profits are currently distributed as income, and then the receivers of it are asked to turn some back into production by making a new investment. Of course, the case is very different when stock dividends are handed out merely by way of capitalizing (and disguising) abnormal rates of profit without any new instrumental goods being created at all.

The third, and most important, modification: In our parable we assumed that all the investment going into the production process reappears as purchasing power for current goods. It is called investment merely because it is distributed in a certain way; but all of it, to whatever kind of work it was devoted, and including the residual share of ownership, reappeared in the parable as demand for finished goods. Now suppose it does not reappear? Under what circumstances will it actually fail to do so? Well, if we have a very great inequality of incomes (see page 44) it is more than likely that investment will be highly concentrated instead of—as in our parable—democratically distributed, and that some part of the investment income

will *never reach the consuming line at all*. Suppose the owners do not carry forward their investment income through bank deposits to demand for current goods, but turn it back again into the production process in a never-ceasing circle. Then there will be a chronic deficiency of purchasing power for the stream of finished goods. And when this closed circle of investment income and capital goods has revolved a long time, there will come a state of general crisis through failure of buying power. The very same process that speeded up the creation of instrumental goods will have made it impossible for the demand for finished goods to keep pace, and *therefore* there will be a general collapse in the value of the instrumental goods themselves. This may prove a partial corrective, though a painful one: it will forcibly cut down, or even annihilate, the real volume of investment and of titles to income arising therefrom. Plants will fall idle, enterprises go to ruin, farms decay; investment values will contract, and the stream of finished goods will shrink. But, owing to the breakdown of the production organization, purchasing power will also cease to be distributed as wages and salaries. And as that is the major means by which purchasing power is distributed in this system, it is unlikely that the crisis will cure the disease. It may well make it worse. At this stage governments may come along with proposals to create more purchasing power by enlarging credit, or even currency. But unless those proposals affect the *distribution* of purchasing

power, they can be no more than temporary palliatives. When a sufficient number of people have been starved or ruined, the whole cycle will get under way again, unless the distribution of purchasing power has been altered from what it was before.

And at that we must leave it. For it may be that such alteration is beyond the power of the capitalist system as we know it. Economic decisions of this kind have to be translated into action by means of the collective will. And the political institutions which a purely capitalist system calls into being give little promise of being adequate to the task.

XVIII

WHERE THE TICKETS COME FROM

§1. Having come into contact with the bankers over the supply of capital and the payment of interest, we may as well improve the occasion and watch them at work. Their operations are much more intricate than we can completely follow on so slight an acquaintance; but they happen to be bound up with the general problem of ticket supply, and we may thus obtain an answer to the question we asked some time back, as to where the tickets come from.

§2. It would be a fitting climax to our study of this rather topsy-turvy world if at this point one could quietly remark, "Well, the joke is that there are no tickets." And the remark would not be so very far from the truth. Most previous civilizations have actually had "tickets" that people carried around with them: pieces of leather, pieces of tobacco, wampum shells, bits of metal. But we do very little of that now. And seriously, do there have to be any tickets? Of course, there has to be a system of numerical values — some method of measurement that will be universally understood and always mean the same thing. We have such a system in the case of ordinary magnitudes. We all know what we

mean when we say a thing is four inches long. But we cannot pick up four inches and put them in our pocket or lock them up in a drawer. Whoever saw an inch? Strictly speaking, there is no such thing as an inch; there is only an inch *of something*. And that is all we need.

Our ticket system is getting to be more and more like that. A great corporation sells an automobile for a thousand. A bank charges 6 per cent on a loan. A book sells for two and a half. A thousand what? Six what? Two and a half what? Does it matter? Not very much — so long as all these measures express accurately the relative values and refrain from meaning different quantities of things at different times or places.

But there is the difficulty: we have never yet found anything to use for tickets that completely fulfilled this condition. Tobacco was used for some time in Virginia; all other values were reckoned in pounds of tobacco. The trouble was that tobacco had a supply-and-demand system of its own. The thing itself got mixed up with the measuring function — as if everybody's inches were made of something, and the something turned out to be elastic. If railroad tickets were also esteemed a table delicacy and people frequently took them home and cooked them for supper — why, heaven knows what the cost of travel might be. The wampum (shell beads) used in New England was a little better than Virginia tobacco in this respect, because it had practically no use except as a measure of values; but it was not very dur-

able or homogeneous. Gold and silver have survived as ticket material because they are durable, homogeneous, easily recognized, highly divisible; but in so far as they are prized as *things*, and have supply-and-demand systems as things, they too are defective. So far, however, all ticket systems have been based on some *thing* which was supposed to have value; the real reason being that the tickets must pass current over the widest possible area, and mean the same amounts of things in general over long periods of time. And only a thing which was supposed to have value of its own would do this. Fortunately, gold has not much; one can fill teeth with it and hang bits of it about one's person, and that is about all. Our ticket system is getting more and more independent of the value of gold as a thing; and if we can succeed in making it quite independent it will work much better than it does now. Actually, as everybody knows, we do not use gold in our transactions. For over 90 per cent of them we do not use anything except bookkeeping. So let us leave the gold to look after itself for a while and approach the ticket system as it really is in common experience.

§3. Well, in common experience the tickets are, as one would expect, made of paper — some written on, some printed, to indicate the relative amounts of things in general that they stand for. The written tickets are used for the great majority of transactions; we call them checks. The check is a written order on a bank to pay out purchasing power to a specified person; which of

course the bank can hardly be expected to do unless the writer of the check has a claim upon it. Written orders also circulate to some extent, made out by one individual (seller of goods) on another (buyer); but these will not circulate very widely because not everybody is sure of a particular buyer's ability to pay out purchasing power. The bank is supported by a wider area of confidence. Checks drawn on banks will frequently be taken in payment by inhabitants of far-distant countries. Of course if the confidence breaks down, the bank's day is over, and checks on that particular bank will lose their ticket value because they will lose their acceptability.

How is the claim on the bank established? By the production of goods or services, in the first place. Suppose I am a dentist and pull out Jones's tooth for him. Jones offers me his wife's umbrella in payment. But I do not want Mrs. Jones's umbrella; I want a claim to things in general, so that I can make my own choice from the national heap. Accordingly, Jones writes a check for five dollars and I pay it in to the bank. A part of Jones's claim has been transferred to me—we have exchanged goods or services in an agreed ratio and the bank is doing our bookkeeping for us. The bank undertakes to furnish purchasing power to my order in the form I demand; and to furnish it *without notice* if this is a checking account. When lots of people are doing this the bank finds itself with a vast pool of purchasing power, only a small part of which is actually being drawn on at a given time. The people do not all

spend their claims on current consumption as fast as they get them. What shall it do with the rest?

Here is a merchant with a favorable opportunity to buy two months' supply of sugar for the community; but he has not the purchasing power to do it. The bank makes him a loan to tide over the period between his purchase and his receipts at retail; charging interest for doing so, or discounting his note. The merchant is being allowed access to the pooled purchasing power, the bank itself retaining liability to its depositors all the time. Here is a local furniture factory wanting to buy lumber; the same thing happens. Here is a fashionable lady in difficulties; she has had a run of bad luck at bridge. The banker pulls a long face. He does not see how she is going to acquire future claims on the community to repay the purchasing power she asks for now. Here is a speculative builder wanting to take up a piece of real estate. The banker hesitates; there may be no doubt about the earning power of the enterprise, but he remembers his instant liability to all his depositors. Perhaps he will send the builder to a special kind of bank that handles that business. Our banker likes his loans to be, in the first place, productive of future values; and in the second place, taken as a whole, liquid — he does not want to see the community's purchasing power all locked up (or "frozen") in a form from which it cannot easily be recalled. For what is he really doing? He is *financing the production of future values*, many of which, without his help, would not come

into being at all. He is assembling the purchasing power that his community is not using for finished goods, and redirecting it toward instrumental goods; and as a result the present flow of goods is maintained, and in fact gradually increased.

Now when the banker discounts the merchant's note, he does not as a rule give cash, though he will if required. He enters an additional deposit on his books in the name of the merchant. His deposit liabilities are increased by the amount of the loan (less discount, which shows as a profit for the bank — also a liability item); and on the asset side figures the merchant's note. This is what is meant by the maxim "Every loan creates a deposit" — in some bank or other. The merchant in turn will pass on some of his new purchasing power to his dealer's account. Then he will build up his own deposit account by claims received from his customers; and presently he will pay off the note by a check. Then assets will diminish and deposits diminish again — in theory; but not in fact. For there is no "presently." The bank wants to maintain a certain volume of loans, replacing one by another all the time. It has "maturities" coming in every day and it makes new loans and discounts every day. That is what it is for; that is the only way by which it can make profits for its stockholders. So no one can tell how much of the total deposits in the banks is primary in character (like the dentist's deposit) and how much secondary (like the merchant's). *For Mr. Jones, who had his tooth pulled,*

may be a clerk in the warehouse that sold the sugar to the merchant! We must therefore revise the simple notion that we started with. Most people have in their heads a picture of a bank holding a certain volume of deposits, which they think of as something like money in a sack, and lending out part of this definite amount. But that is meaningless because the banks create deposits by loans; and to talk as if the banks' lending power were limited by the volume of deposits is reasoning in a circle.

§4. But if it is not limited by the volume of deposits, by what is it limited — if at all? There are two separate answers to this: separate in fact and separate in theory.

First, the banks' lending power is limited by the demand for loans of suitable character. The bank must always be prepared to meet the demands of depositors; and against these it has a whole series of lines of defense. The front line is cash in the till or in the vaults. The next line is day-to-day loans which can be (theoretically) called on demand. These are used mostly for speculation and secured by stock-exchange collateral. By calling loans the banking system automatically reduces the volume of its deposit liabilities and relieves pressure. But unless the banks are very careful how they do it they may precipitate a panic by compelling their debtors to realize their securities under coercion ("throw them on the market"). And seeing that a loan repaid is so much purchasing power canceled, the enforced shrinkage of purchasing power may cause a general decline in

monetary values and upset all the estimates on which general credit is relying.

The next and main defense line consists of loans secured on goods in transit, or in preparation; like the merchant's sugar or the furniture factory's lumber. These are also of short duration — thirty to ninety days — and their soundness rests on the financial values of the finished goods at the expected price levels. Then comes a network of time loans resting on various kinds of collateral, all of which is supposed to be salable in case of need. Finally comes the capital stock of the bank representing its own business (value creation) and its investments. And the whole of this defense system rests ultimately on the maintenance of the anticipated demand for finished goods and services; which in turn depends on, first, the steadiness of the price level, and second, the sufficiency of the volume of purchasing power directed to consumption. The first of these is to some extent a banking matter; the second is not.

Notice that we say the *steadiness* of the price level, not the price level as such. The actual level is not very important; but changes in the level work endless mischief. When the price level changes, a ticket violates our basic requirement that it should not mean different quantities of things at different times. If general prices rise, the value of the purchasing power unit becomes less and debtors actually repay less to creditors than they borrowed. All fixed incomes decline in real value; the buying power of interest payments, annuities, pensions,

and the like is reduced, and many people suffer hardship. Wages and other costs lag behind prices; and hence comes a further failure of demand at the very time that the resultant increase of profits is speeding up supply. The distribution of the national income is upset, and a painful reaction becomes inevitable if the rise is very sharp. When prices fall, debtors may be ruined; the farmer whose mortgage payments represented one third of his crop value may find that his entire crop will now be inadequate to meet his obligations. The nation that owes money to another nation may find that the proportion of its people's goods required to make the payments has become unbearably high. Wages do not fall as fast as prices, but the fact is usually countered by a decline in employment. For all these reasons, and many more, stability of the price level is in general supremely desirable. Can the banks maintain it?

Yes, to a considerable degree. The banks, by charging more or less for loans, can contract or expand the volume of available purchasing power. But it does not follow that every fall in prices should be, or could be, offset by an expansion of bank credit, or vice versa. If the trouble can be shown to arise from a slowing-up of business activity (movement of goods accompanied by wage and salary disbursements) *directly due* to inadequate credit facilities, then a liberal banking policy will correct the situation. But not every failure of demand is in fact so caused. The banks finance production, not consumption. You and I cannot obtain purchasing

power from banks simply to buy more goods; if we obtain any, it is on account of our productive, not our consumptive activities. The banks cannot, by any system whatever, pump new purchasing power into consumption as they can and do into production. Consequently, if a failure of general demand arises from a maldistribution of purchasing power *inside the productive system* (as, for example, on page 227), then the remedy lies outside the hands of the bankers. And an inflation policy under those conditions may prove only a temporary palliative, making matters in the end worse, not better. The same will be true where bank loans have been extensively diverted to nonproductive activities, which, without enhancing the real income of the community, seriously distort the distribution of buying power. The safest guide to banking policy remains what it has always been — a strict and conscientious scrutiny of loan applications with a view to their genuine and natural productiveness. The price level must indeed be considered; but it must never be assumed that the demand for finished goods lies entirely within the control of the banks, or that banking policy alone can remedy business evils which spring fundamentally from fluctuations in that demand.

§5. But we remarked above (p. 235) that there were two separate answers to the question of the limitation of bank credit; let us now turn to the second answer. This answer relates to the demands of depositors for legal tender currency, and ultimately for gold. All

American national banks must, and others may, cover a certain proportion of their time and demand deposits (3 per cent for time, and 7, 10, or 13 per cent for demand, according to the size of their towns) by deposits of their own with one of the twelve great bankers' banks of the Federal Reserve system; and against these deposits they may draw currency—coin, bank notes, treasury notes—or gold. They may also borrow from these banks on security; and they may *rediscount* the commercial bills they hold—that is, sell them to the reserve bank. So that a “retail” bank wishing to strengthen its cash position can increase its deposit account with a “wholesale” bank in one of these ways and then draw whatever additional cash or gold it requires. Now the same principle works for the wholesale banks as for the retail banks: depositors do not demand all their purchasing power at one and the same time, so it is not necessary for the Federal Reserve banks to cover their deposit liabilities by 100 per cent cash or gold. The law sets 35 per cent legal tender and gold as a minimum.

The main demand of the public for actual cash is therefore concentrated on the Federal Reserve banks; and the main purpose of the member banks' deposits is to enable them to draw currency when they want it for their customers. Some part of the currency is issued by the government itself—all coin and some kinds of paper. The Federal Reserve banks also issue bank notes, and against the total of these they must hold gold to at least 40 per cent, and commercial paper for the rest.

The object of the latter should now be evident. When member banks increase their deposits by rediscounting commercial bills, and withdraw bank notes, they increase the amount of cash money in circulation; but as the bills become due for payment, the reserve banks take purchasing power back again from the community, and in this way some correspondence is secured between the issue of paper money and the amount of trade being done. The gold-reserve requirement has a similar purpose: to prevent an excess issue of currency or credit without any addition to real values; because if that takes place there will be monetary inflation (increase of purchasing-power units without a corresponding increase of real values) and all the evils we have described above.

At this writing the actual gold reserve in the Federal Reserve system is nearly double the legal minimum; so the gold is not acting as a limit upon bank notes or bank loans—the first method is functioning instead. But in other countries where a similar principle of limitation is followed, the supply of gold is acting as a very drastic limit; and in several of them the principle has had to be abandoned because they have not gold enough. For the world as a whole it is more than doubtful whether the supply of gold can keep pace much longer with the demand for purchasing power.

§6. This brings us back to our starting point. Why must purchasing power be tied to this particular commodity? Because at present it is the only form of ticket that is acceptable internationally. Its acceptability is

entirely a matter of custom and confidence, for it is practically useless; but so far no kind of ticket that cannot be translated on demand into a stated weight of gold will pass current everywhere. And so "convertibility" remains the ultimate criterion of a monetary system, acting directly upon all other forms of currency, and through them upon credit. Without the gold basis it is feared, with good reason, that banks and governments will not be wise enough or strong enough to refrain from manufacturing money by means of the printing press. Once they do that their "ticket system" is liable to fail and their trade to be imperiled; because nobody will know for certain how much of things in general one of their tickets is worth. None the less, the gold basis is a far from satisfactory guide to the business of ticket issuing; but when we see the orgies of economic folly both governments and peoples are capable of, we cannot as yet entertain proposals for its entire abandonment. Such reforms, like many others, must wait until the international organization of mankind reflects more truly the reality of their economic life; and until they have acquired a faith in that organization at least as great as the faith they so pathetically place to-day in their nationalistic symbols of separation.

XIX

CONTRACTUAL INCOME: WAGES

§1. Out of our total population of 122,000,000 people, nearly 100,000,000 get their purchasing power mainly or solely in the form of wages and salaries. The actual earners in this group number about 27,000,000; the rest are dependents. Outside this hundred million are people working on their own account—from small farmers and shopkeepers to corporation directors with million-dollar incomes—and people who live entirely by owning. The wage and salary group gets—or got in 1925—about 57 per cent of the total realized income of the nation. How is that share determined?

Well, if there were no other groups to consider, and access to materials were free for all, the wage earners (using the term to include salaried workers) would get 100 per cent of the income; and the absolute size of their receipts, apart from the question of natural resources, would depend on their skill and their energy. They could increase their collective income by improving their efficiency; but, given a certain degree of efficiency, the size of it would depend on how hard they wanted to work. Somewhere or other they would draw the line between work and leisure; they would draw

it, in fact, at the position in which marginal cost (effort) and marginal reward (utility) were about equal. This is the ultimate application of the rule of balance. Of course, they would still have the task of dividing this collective income among themselves, among the various occupational groups. They would do this, as we have seen, by moving from low-productivity to high-productivity lines of endeavor, and they would shift around until in the various lines equal amounts or intensities of effort were getting equal rewards. So the relative outputs of different goods would be determined, and presumably everybody would be satisfied.

But there are other groups to consider. There is the group of owners of land and natural resources. The members of this group, we have seen, are in a position to demand payment for the use of any land whatever, and those of them who have the more desirable land can get a differential gain in addition. Such is the power of ownership; it has the final word in any economic bargain. This group in 1925 took 13 per cent of the national income as rents and royalties. Then, as our wage-earning group does not own very much, and as it does not receive very much more than it needs for current expenditure (average yearly wage for factory workers was \$1280 in 1925), it must persuade people who can spare funds for investment to turn them back through the production process in a continuous stream. Some of its own receipts, of course, will be turned back

this way, and a large proportion of the landowners will also figure in this capital-supply group. This group in 1925 took 5 per cent of the national income as interest.

But stay a moment; things do not happen this way. It is not the wage earners who bargain for capital-supply; it is the business managers as representing the owners of business and industry. These owners, in 1925, received some 25 per cent of national income as dividends and other forms of profit; and it is with the delegated power of these owners that both lenders and workers must bargain. For it is that power which assembles land, capital, and labor in productive formation, rewarding them by contractual payments and retaining a residual share as its compensation. Able workers are continually being drawn toward these organizing and managerial functions; but their authority in such positions rests not on their ability but on the ownership-control delegated to them—a fact recognized in practice by the almost universal rule that workers accepting positions as foremen and upwards surrender their union cards. It is this dualism embedded in the structure of Western industry that creates the wage problem as we know it—this pull-devil, pull-baker business in which ownership strives to retain as large a residual share as possible against the demands of all the specific functionaries that it hires. The struggle is bitter because the ownership group and the wage group consist almost entirely of different people; and it is endless because neither group can produce without the other.

§2. When business men in the early nineteenth century began theorizing about wages, they found ready to hand a view of the beneficence of the "natural" order which suited their interests very nicely. And as science progressed in understanding the "laws" of physical nature, respectable economists discovered similar "laws" in the sphere of human nature which showed how inevitable was the existing economic order and how foolish and futile it was to try to alter matters. That was what made economics respectable. There were other economists who denied that the system was inevitable and asserted that it ought to be, and could be, radically altered; but these economists were not respectable and no university chairs were given to them. Indeed, until quite recently this "state of nature" argument held the field, for the same reasons which made it popular in the first place; and it has very high authority. "The laws and conditions of the production of wealth partake of the character of physical truths," said J. S. Mill. Did the landlords' share at times appear extortionate? But rents were "a most real and essential part of the whole value of the national property, and *placed by the laws of nature* where they are" (Malthus). Did wages appear to their recipients unduly low? But "the *natural* price of labor is that price which is necessary to enable the laborers, one with another, to subsist, and to perpetuate their race without either increase or diminution"; departures from this "price" would inevitably be corrected by the "natural" tendency of births (or sur-

vivals) to decrease or increase with downward or upward "deviations" from the "natural" level (Ricardo). The absence of any corresponding limit to rents or profits (James Mill) was unhesitatingly accepted, by a parliament composed mainly of landlords and manufacturers, as further proof of the beneficence of the "natural" order. "The economists became [says G. D. H. Cole], even against their own intention, the apologists of things as they were; it became their appointed mission to demonstrate to the poor, with scientific irrefutability, the virtues and blessings of machine production and the wage system. Political economy, the 'dismal science,' was called upon to justify every abuse of industrialism by throwing over it the glamour of scientific inevitability, and holding out the promise of progress to all who ceased to kick against its laws."

The "subsistence theory" of Ricardo, with its Malthusian assumptions, has been reluctantly abandoned for the simple reason that the assumptions were false. Wage earners do not counteract upward movements of real wages by increased breeding. But it was succeeded, as circumstances demanded, by an equally pessimistic theory known as the Iron Law of Wages. In this theory the assumption was made that wages are paid from a "fund" of capital which is fixed at any given time, so that the rate of wages depends on the relation between the number of would-be workers and the size of the "wage fund." Any arbitrary advance beyond this rate would constitute a raid on profits, the "fund" would diminish, and unemployment would bring the

a just one. It is worth while to see how and why this result would be attained.

§3. The marginal-productivity theory of distribution states that each agent of production will be employed up to the point at which any one unit of it (or small number of units) is earning no more than the reward it actually receives; and this reward will therefore set the rate throughout the group, because at a lower rate the employer will be encouraged to employ more, while at a higher rate some of the group will be unemployed and their competition will force the rate down. In its practical outcome, the theory is therefore not very different from the Iron Law — though in one important respect it is theoretically inferior to the wage-fund notion. Let us see it at work.

A concern is employing 100 men with a given amount of capital, management, and so forth; returns to other factors than labor may be assumed constant for the small variation we are going to introduce. What is the connection between labor and productivity?

EM- PLOY- MENT	LABOR COST AT \$10 PER DAY	LABOR COST AT \$11 PER DAY	ALL OTHER COSTS	GROSS RE- CEIPTS	NET 1 (\$10 RATE)	NET 2 (\$11 RATE)
100	1000	1100	1000	2500	500	400
101	1010	1111	1000	2525	515	414
102	1020	1122	1000	2550	530	428
103	1030	1133	1000	2575	545	442
104	1040	1144	1000	2590	540	446
105	1050	1155	1000	2600	550	445
106	1060	1166	1000	2610	550	444
107	1070	1177	1000	2615	545	438

Look first at the gross receipts. Each additional man has added something to the total in this column; but the rate of increment falls off. This might be on account of elastic demand, but we will eliminate demand for the present — there is another reason. That reason is called the law of diminishing returns to single factors of production. If we keep adding one factor while holding the rest constant, the unit importance of that factor will grow less and less. In the case of labor, there will be less and less equipment per man and therefore the value-output per man will not increase as fast as the total number of men. Ultimately the value-output per man might even become negative, when we had so many men that they got in each other's way. So the rate of increase in our gross receipts is falling off: the 101st man added \$25, the 107th added only \$5.00. So if the wage is over \$5.00, that man will not be employed — not because he is that particular man, but because with 107 men the value-output of *any* one of them is only \$5.00.

Now we have assumed alternative wage rates of \$10 and \$11. With the \$10 rate, the net increases up to 104 men because up to that point each man adds more than he costs. The theory argues, therefore, that this employer will naturally increase his labor force up to at least 105 men; or, if he does not, others will. At that point marginal productivity (the addition to gross) only just equals marginal wage. The position is the same for 106 men — there is a “zone of indifference.” But be-

yond that point there is an absolute decrease in net because the marginal product is less than the marginal wage. If the wage rate is \$11, the absolute limit of employment is 104; if the rate is lower, the limit will be reached later on — more men can be employed. The reader can experiment for himself with other rates.

§4. Now what does this sort of calculation show us? It shows us the *relation between* wage rate and volume of employment, *and nothing more than that*. It tells us — in terms of our example — that, if we assume a \$10 wage rate, up to 106 men may be employed; or that if this concern is to employ 106 men the rate cannot be more than \$10. But if we want to know *why the rate is what it is*, the theory does not tell us, because we do not know what it is. There is the concealed assumption that we start with a given labor supply and a given capital equipment; and only with such assumptions can this marginal method of calculation tell us anything. This defect was long ago pointed out by Alfred Marshall: "We know that the wages of any worker tend to equal the net product of his labor. They are not governed by that net product; for net products, like all other incidents of marginal uses, are governed together with value by the general relations of demand and supply."

Marshall goes on (*Principles of Economics*, VI, II, 7) to enumerate certain conditions as indispensable to the working of the marginal principle in any case. The chief of these may be stated in this way: For the mar-

ginal-productivity principle to work for any one factor of production it must work equally for all of them at once. In our numerical illustration we assumed certain returns going to capital and management; but if these returns are not in fact adjusted to the marginal productivity of these factors, then our wage rate will not show the real marginal productivity of labor. More generally, if there are independent forces — the influence of the law in valuation cases, for example — enabling one factor to retain a more-than-marginal return, without immediately and directly bringing into play corrective influences from other factors, the working of the marginal principle will be so rough that only by chance will it ever be actually approximated. To some degree such corrective influences do operate, but only in a very slow and imperfect way. No argument for the specific justice of a *laissez faire* policy can be built upon them. The distribution of political justice is far from perfect; but it is much better than the distribution of economic justice that would result from leaving everything to the “natural laws” of economics. Our bodies have a natural tendency toward health and soundness; but the death rate would be unpleasantly high if we left everything to the “natural laws” of biochemistry.

§5. Let us look a little more closely, however, at such corrective forces as there are. We can approach them by asking of the marginal theory Henry Clay’s question, Will the employer pay what he *can* pay? Theoretically

he will; for two reasons. First, if he does not, labor will leave him for other employers who do. This may happen provided there really are such other employers that labor knows about, and can reach, and that they really are in competition with one another for labor. Though even then, of course, a submarginal rate of wages can persist indefinitely so long as the difference is not greater than the costs and the risks of movement. Arguments, however, which rest on the general mobility of labor lose a great deal of their force under modern conditions because of the increasing specialization of labor. Workers tend more and more to split up into a vast series of noncompeting groups. The number of recognized separate occupations is on the increase all the time; and while under exceptional circumstances — war or chronic depression — a good deal of intervocational mobility develops, in normal times the mobility of labor is restricted to very definite occupational limits which are contracting rather than expanding in area. Current methods of labor training, organization, and hiring tend to emphasize these limits. It is still true that work of equal intensity and skill in different noncompeting groups *tends* to equality of real wages; but this tendency works mainly through choice of occupations by youths rather than by intervocational shifts. And as regards mobility within the occupational area, we must remember that the theory demands movement of the lower-paid workers toward the higher-paid, not vice versa; and that it is precisely

those who should move that are generally least able to do so.

The second reason why, in terms of Mr. Clay's question, the employer will pay what he can pay is that the abnormal profits of the employer who refuses to do so will attract more capital into his line of business and reduce the rate, and bring up the wage, through competition. This was more or less valid for small-scale industry of the owner-manager type. But the attempt to establish the validity of the marginal-product theory by appeal to competition in such cases as Telephone and Telegraph, General Motors, Ford, United States Steel, *et hoc genus*, seems a little bookish. Competition has to get leave of the bankers before it can even begin. *And we do not want more goods.* We have more than we can buy already.

Now — still arguing along the lines of competitive marginal theory — let us ask the converse of Clay's question: Can the employer pay — or be made to pay — more than he will pay? In other words, can the wage rate be held above the marginal net product level? Of course not! For that will mean a raid on the returns to some other factor of production (also marginal, by hypothesis); the supply of that factor will shrink, general productivity will be reduced, and labor will either come back to the "natural" rate or lose employment. The same result will follow if the increase in labor costs is passed straight on to the consumer. For unless demand is infinitely elastic, sales will fall off;

and if it is infinitely elastic, sales of something else will fall off. Labor somewhere will lose, anyhow.

The argument has some truth, and in isolated situations a good deal of relevance; but it is much too simple. Let us take up this question of efforts to raise wages and study it with reference to two main methods—state action and trade-union action. First, however, let us ask whether there is any reason to suppose that wage workers as a class do receive less than their productivity share of the national heap.

Put in this form, the question really admits of no answer. How can we possibly know what is the marginal productivity of labor as a whole? We know roughly what labor gets in money wages, and we can compute what that amounts to as real wages—that is, wages measured in goods and services. The only other thing we know is that, if all the equipment were taken away, labor's total or marginal productivity would be zero; but the productivity of *any* factor of production will be zero if the others are taken away. Some writers in fact reject this line of argument entirely on the ground that you cannot assign specific productivities to separate factors of production; the productivity, they say, is that of the system as a whole expressed in financial terms, and its distribution is the result of "social forces" rather than economic laws. But among these social forces bargaining is certainly one; and perhaps we can make a little progress by examining the limits of the wage bargain.

§6. So long as the laborer has free access to materials, there is an obvious downward limit to the terms of employment set by what he can make by working alone. This limit existed until the third quarter of the nineteenth century in America. It was a pretty low limit, especially when the costs and risks of movement were reckoned in; but its removal certainly reduced the bargaining power of labor. For bargaining power is really power to say no to an offer. And while it is true that neither capital nor labor can indefinitely refuse to conclude a bargain, there may be a difference in the time limits during which either can "hold out on" the other as well as on the amounts at which either will deal.

For labor, the downward limit is subsistence level. But subsistence level is not a very definite figure; the idea of the standard of living pushes it up, and the threat of starvation pushes it down. In my section of the country, at this writing, unskilled and semi-skilled labor in textile mills is receiving from ten to fourteen dollars a week, and girls are being hired at four. There is still much unemployment. Possibly if common labor could be hired at five dollars a week much of it could be absorbed. But it displays a striking tenacity in refusing such a figure — heaven knows how; and, further, no sensible employer would take labor at such a figure. He would find it not worth the taking — the incentive would be too low to call forth tolerable work. Employers have only recently become convinced of "the economy of high wages"; but it is now generally ad-

mitted that the efficiency of labor is directly and considerably affected by rates of pay and working conditions. So we may say that on both the supply and the demand side there is a rough lower limit somewhere about minimum-subsistence level as understood in the time and place. The actual level may fall below that in particular circumstances; but not permanently. And that is the ultimate limit for all grades of labor; though in the skilled grades we find a greater reserve power and a psychological resistance that is terrific.

§7. Now where there is an indeterminate zone the circumstances of landless labor always push it toward the lower limit of that zone; because the part of the group seeking work which has the lowest reserve power will determine the bargain. In common parlance, "You are worth what it costs to replace you." The individual never really bargains as an individual — he is merely an integer in a group of a given size. Further, it is a matter of indifference to the employer whether a particular individual is hired or not; but it is a matter of great importance to the individual. Hence the larger the group the weaker is the position of any individual in it. The group is really the bargaining agent, whether it is organized or not. Unorganized it can only weaken each of its members. Organized, its coherence will seldom be great enough to enable it to reach the highest level of the bargaining zone; but it can avoid the very lowest.

§8. In practice, however, the largest (and therefore

weakest) groups are the least likely to be organized; and most nations have therefore laws to prevent this class from being forced down to the limit of its weakest members. British laws explicitly apply only where organization is inadequate. Seventeen states of the Union have passed minimum-wage laws of various kinds, but the Supreme Court took away in 1925 all power of enforcement. What interest has society in the matter? Here is one answer:—

INFANT DEATH RATES PER 1000

(Classified according to Father's Income — Pre-war Figures)

Up	to	\$ 450	156.7
450	"	549	118.0
550	"	649	108.8
650	"	849	96.
850	"	1049	71.5
1050	"	1249	66.6
1250	"	1449	64.
1450	"	1849	86.3
1850 and up			37.2

It has been truly said that families do not live on less than a living wage: they die on it. And where there is nothing in the economic system to stop them, civilized countries put something in the legal system instead. Evidence relating to the social cost of unduly low wages, in crime, sickness, insanity, and deterioration of every kind, makes of minimum-wage legislation an economically sound proposition.

But here we have the abhorred case of arbitrary interference with the "natural" wage level! Actually we may distinguish two types of interference. There is

the case where the employer is not paying as much as he could pay consistently with retaining his position in the business. This presents no serious obstacle. But there is also the case where he is paying as much as he can afford to pay, and yet it is below what society determines to be a safe minimum. Here we have the possibility that the employer will be driven out of business and the workers out of employment. That possibility must be faced. It is both socially and economically desirable that capital and labor should be displaced from uses where their productivity is so low that the quality of human life is imperiled. But in practice, with careful administration and an allowance of time for readjustment, the amount of absolute displacement is very small. The records of minimum-wage policy show conclusively that industries to which it has been applied are not ruined, but improved; the field of employment does not undergo a permanent contraction, and the amount of even temporary dislocation is slight. There is a very important reason.

The productivity of labor is mainly determined by the employer—and that fact makes another dint in the halo of productivity theory. If labor has no reserve power it will be set to uses where its productivity is very small and the upward limit of the wage bargain very low; because that obviates the trouble of securing adequate equipment. But if it is given reserve power, — the lower limit forced upward, — then employers will see that its productivity is correspondingly improved;

and there are very few cases in which they cannot and will not do this rather than abandon their business. Forty years ago the Port of London was one of the worst equipped in the world. Dock labor was abundant and unorganized, with no reserve power whatever, and every task was done by hand. The organization of dock labor has gradually forced the improvement of methods and equipment, with results advantageous to both labor and ownership. Minimum-wage laws wisely applied have the same effect; and an English economist of excellent standing now maintains that the reason for the comparatively poor position of many British industries is not that trade-unions have been too stubborn, but that they have not been stubborn enough; they have not pressed hard enough against the conservatism of British management to compel modernization.

§9. This brings us, following naturally on our discussion of the lower limit to the wage bargain, to a consideration of the upper limit; and since we have broached the question of labor displacement, let us look a little more closely into that. We may say at once that the amount of labor displacement resulting from minimum-wage laws or trade-union action is likely to be much less than the displacement due to unregulated competition. In the former case the pressure comes from agencies (society as a whole, or organized groups of workers) that must themselves reckon with the consequences of their policy. If their pressure through the wage scale on the level of efficiency causes grave displacement, they

cannot avoid facing that fact. Technological displacement resulting from the competitive efforts of employers to cut costs is far more serious, for the simple reason that employers do *not* have to reckon with the consequences of their policy. They can pass on to society at large the entire labor costs of whatever changes they deem it profitable to make. They cannot scrap their material equipment without charging to the business the entire cost of the change, because ownership control will not let them. But so long as society permits them to escape the displacement costs of technological competition, it will proceed at a pace which makes reabsorption of the displaced labor exceedingly problematical. Especially is this so where there are a surplus of capital and a dearth of buying power. Yet these very conditions which encourage the process make the problem worse. For while with one hand industry is enhancing its capacity and efficiency at reckless speed, with the other it is cutting off the purchasing power that alone can keep the wheels turning.

Pressure on the upper limit of the wage bargain comes nowadays from two sources. It comes to some extent from the efforts of the better employers, who have realized the paramount necessity of maintaining the volume of purchasing power in the hands of the mass of the people. These employers are handicapped by the cost-cutting competition of their brethren, especially in industries where considerable variations in the scale of production are possible. And in the absence

of any method of enforcing a given wage policy, the "gospel of high wages" is likely to be of very limited effect. Further, for reasons suggested in the previous chapter, the economic *impasse* is not likely to be solved until that gospel is complete — "high wages *and lower profits*"; but so far as the writer is aware, not even Mr. Ford has carried the matter that far.

The more usual, and traditional, means of pressure comes from collective bargaining; and that raises the question of the efficacy of trade-unionism. There is little ground for supposing that American unionism has, or ever has had, very much influence on general rates of wages. Broadly speaking, American wage earners have yielded to the temptation to spend their high wages as fast as they got them (sometimes faster, with the aid of installment salesmen); and they have neglected to build up the reserves of purchasing power which alone can give a non-owning class the power to bargain effectively. Further, the craft-conscious basis of American unionism has given color to the assumption of both wage-fund and productivity theory: namely, that a gain for one section will mean a corresponding loss for some other. What advantages American craft-unionism has secured for itself have without doubt been largely at the expense of unorganized labor — especially foreign, Negro, and female labor. The situation in this respect shows little sign of changing.

The assumption, however, is not universally or absolutely valid under modern conditions. Modern tech-

nique calls for an assemblage of various kinds and grades of labor in fairly definite proportions; and a gain secured by one grade cannot easily be counteracted by upsetting the proportions. A sectional advance usually starts an upward pressure from other sections at the very time when the employer is theoretically supposed to "take it out" of those sections. Further, a sectional advance — secured, let us say, by the moulders — does not *ipso facto* alter either the supply or the demand schedules for pattern makers or machinists; and in so far as these are non-competing groups it must not be assumed without question that what one group gains another group loses. Employers in fact usually respond to pressure by efforts to raise productivity. Some methods of doing so are inimical to labor, others are not. A really intelligent union such as the Amalgamated Clothing Workers can usually coöperate with management in order to secure such an advance in productivity; and where that is done, every section, including management itself, gets some benefit.

But suppose all labor were organized, or wage legislation were universal, so that upward pressure could be applied all along the line; could such pressure secure a different result from that of the "natural law" of *a priori* economics? Let us assume — it is a safe assumption — that any such advance could not be entirely passed on to the consumer through a corresponding increase in the price level, so that a real raid on profits

took place. What would be the probable response of ownership?

First, we must allow something for the efforts of employers to maintain the rate of profits by improved efficiency — along with a certain amount of labor displacement. Second, we must count on additional labor displacement from marginal firms that failed to readjust. Third, we must distinguish between the various kinds of capital. Fixed capital could not easily escape loss; but working capital is free to move, and new investment capital can travel round the world on a telegraph wire. There is a certain inertia arising from people's preference for having their investments at work where they can watch them; but against this there is the temporary escape into speculative uses, and the undoubted ease with which capital can leave the country. We should have, therefore, to reckon with four consequences: considerable labor displacement, entailing failure of demand for goods and services; a growing difficulty in the supply of working capital, and therefore a further slowing down of industrial operations; a decline in the rate of capital accumulation in so far as profits were diminished; and a flight of new investment capital to other than industrial uses, and to other lands. Australian experience with general wage fixing — the most extensive experiment of its kind — seems to confirm this forecast; and we are probably justified in concluding that no important alteration in labor's *share*

of the proceeds of industry can be achieved and retained by simple upward pressure on the wage level.

This is not, of course, to say that labor's status cannot be improved. Minimum-wage laws and collective bargaining can do much to correct inequities and prevent abuses; but all such action can take place only within the limits of the financial productivity which ownership demands. The economic system is like a machine of which the profits motive is the driving power. The output of the machine can be adjusted within limits on the terms of the machine itself. But if an independent pull is arbitrarily applied along the conveyor belt, the result may be merely to strip the gears and bring the entire outfit to a standstill. In other words, to attempt to change the scheme of distribution by operating simply upon the wage share, while leaving the claims of capital, the distribution of capital, the supply of capital, to the accepted methods and motives of *laissez faire*, is an effort foredoomed to failure.

XX

ENVOI

The popular faiths of a democracy are always simple. They have to be. People are too busy to frame adequate notions of their collective existence. They have other things to attend to, and time and energy are limited. Individualism and competition as clues to the labyrinth of economic life owe much of their popularity to the fact that they are (apparently) nice simple notions about which simple souls can make effective speeches that other simple souls can comprehend. Actually they are not simple notions, but very complex ones, and their operation calls for all manner of controls and qualifications; but that fails to affect the popular faith in them. Natural law in economics is another of these pseudo-simplicities. When we pause to think or to read about the matter, we find that nature—including human nature—is a very complex affair that scientists have the greatest difficulty in expounding. Yet in practice we select certain aspects of our human nature—the simple ego instincts that everybody experiences—and malign ourselves by pretending that these are all we have to reckon with. It saves a deal of trouble—and creates a great deal more; but we are a lazy lot where

our collective life is concerned, and like to think that the general welfare will take care of itself; as if so great a good ever came by accident! And, although we find ourselves periodically ruining one another by speculation, starving each other by planlessness, cheating, robbing, defrauding, enslaving our fellows, blowing them up with bombs or sending them to the bottom of the sea, manufacturing poison wholesale for those that get in our way, we still profess to believe that the individual quest for gain is a sufficient guarantee of the common good, and that every limitation of the sacred right of profiteering is a step on the road to danger. Thus, at this moment, of all the nations conferring on disarmament only one has ventured to take the private profit out of armament manufacture. And the rest, with millions of their people in peril of starvation, still talk as if a planned economy could somehow be devised without imposing any further restrictions upon individual profit seeking.

To study economics with the assumption that it is all a matter of "natural law" in which no major modifications can be made is therefore a futile and depressing enterprise. If the assumption were true, it would be better to forget it and study something else. But the approach to economics the reader has now made rests definitely on the fact that the assumption is not true; it is the approach known as "institutional." It assumes that the human forces we deal with in economics are merely the raw material of civilization, and that their

manifestations and results are determined by the institutional setting in which they operate. This institutional setting, and therefore the working out of economic forces, can be modified by acts of collective will; and through such acts other phases of human nature can be brought into play beside those on which the nineteenth century built up industrialism. There exists, therefore, in this view, the possibility of radical betterment not only of the economic system as such, but of the range of expression it affords to human nature; a possibility not only of making men richer, but of making men happier; a possibility, for example, of releasing more of that social and coöperative spirit that is the finest thing in unfettered American life, and is so sadly thwarted at present in the American economic system.

Yet if the popular understanding of collective life errs by over-simplification, so do most popular specifics. Disappointed or disgusted with the results of a system based on too simple assumptions, people put their trust in remedies that err in precisely the same way. If there is any task harder than persuading the average politician to face the complexities of economic issues, it is that of persuading the doctrinaire radical to talk in specific and realistic terms. For an obvious reason: discontent needs an emotional rather than an intellectual outlet; and only very simple conceptions can supply the basis of it. It is easy to rouse enthusiasm by denunciation — let us say of absentee landlordism in American and English coal fields. And when leadership fails, it is necessary

to do so, too. But it is not easy to rouse enthusiasm over an actually workable plan for the salvage of the coal industry. The aims of any such plan may perhaps be expressible in simple terms; but the business of planning must be done in cold blood by people who are more concerned to get something accomplished than to release their emotions.

The reader who has followed the book so far will have missed its point if he has not acquired a tinge of empiricism in his approach to economic problems. Schemes of reform must take account of all the human and institutional factors involved, and reckon with the rate, as well as the direction, of possible change. Projects that are economically possible in ten years may be economically disastrous in five; and that is no excuse for doing nothing now—it is the reason for beginning. Further, there are cases—perhaps a majority—in which, while the direction of desirable change is clearly indicated, the final situation cannot be definitely outlined in advance. This is the characteristic position of liberalism, which incurs the scorn of the doctrinaire. It calls for faith and patience no less than for purpose and persistence. It makes the study of economics an adventure; an adventure in life as well as in thought, testing the tenacity of idealism in the strain and stress of understanding. It is an adventure for young people. It is the challenge we of the war time pass on to them.

NOTES AND REFERENCES

Bibliographical Note. In addition to the specialized works listed for each chapter, the student may accompany this survey with one of the larger general texts. The author's preferences, in the order named, are:—

SLICHTER, *Modern Economic Society* (New York, 1931)

FAIRCHILD, FURNISS AND BUCK, *Elementary Economics* (2 vols., New York, 1930)

EDIE, *Economics* (New York, 1926)

An alternative, recommended especially for elementary students needing a descriptive approach to social processes, is the following collection of material:—

MARSHALL, *Industrial Society*, (3 vols., Chicago, 1929)

References to this work are given throughout (*Ind. Soc.*), primarily to meet cases where a large assortment of supplementary books is not available.

References for each chapter are arranged in two groups according to the degree of preparation (or, in certain cases, of judgment) required of the reader. All books cited as wholes in the first part of each list are short enough to be read in one or two sittings. Works especially recommended are marked with an asterisk (*).

A word of advice may perhaps be tendered to the advanced student and the beginning teacher. A good minimum equipment would contain:—

- (a) One of the larger standard texts of economics.
- (b) One of the histories of economic thought: Cannan

(for the period up to J. S. Mill), Gide and Rist, or Haney. Reference for individuals or specific theories to the *Encyclopædia Britannica*, *Dictionary of National Biography*, *Encyclopædia of the Social Sciences*.

(c) An economic and social history of the United States: Lippincott, Bogart, Faulkner, or Beard.

(d) A supply of current illustrative material. There are several good case books for those who can use other people's cases. The *Monthly Labor Review* of the United States Labor Bureau is a mine of excellent material, and the newspapers and the more intelligent weeklies will supply special studies galore.

It must be remembered, however, that the main peril to the elementary student lies in carelessness or inadequacy of expression; and all training, of whatever type, must aim primarily at scrupulous accuracy in the use of words.

CHAPTER I

Ind. Soc., Vol. I, Ch. 1

CANNAN, *Wealth* (1920), Ch. 1, 2

TAUSSIG, *Inventors and Money-Makers* (1915)

TEAD, *Instincts in Industry* (1918)

TUFTS, *The Real Business of Living* (1918), Pt. I

SELIGMAN, *The Economic Interpretation of History* (1903)

BEARD, *The Economic Basis of Politics* (1922)

COMMONS, *Legal Foundations of Capitalism* (1924), Ch. 1-3

PIGOU, *Economics of Welfare* (1920), Ch. 1-6. (Relation between economic welfare, general welfare, and national dividend)

LORIA, *The Economic Foundations of Society* (1899)

BARNES, *Sociology and Political Theory* (1924).* (Excellent bibliography)

CHAPTER II

Ind. Soc., Vol. I, Ch. 2 (A-F)

Encyclopædia Britannica: Mercantile System, Colbert, Turgot, Adam Smith

CANNAN, *Wealth*, Ch. 14

HORROCKS, *A Short History of Mercantilism* (1925) *

FAULKNER, *American Economic History* (1924), Ch. 7

SMITH, ADAM, *Wealth of Nations* (1776), Bk. IV, Ch. 9

ASHLEY, *Economic Organization of England* (1914), Ch. 3, 4

TUGWELL *et al.*, *American Economic Life* (1930), Ch. 1-4

HANEY, *History of Economic Thought* (1911), Ch. 7

HOBSON, *Evolution of Modern Capitalism* (1917), Ch. 1-6

HIGGS, *The Physiocrats* (1897)

SPANN, *History of Economics* (1930), Ch. 1-8. (Valuable appraisal of Mercantilism and Adam Smith from the German standpoint)

ROSCHER, *Political Economy* (1878), Vol. II, App. II

ELY, *Outlines of Economics* (1930 edn.), App. A: "The Development of Economic Thought"

CHAPTER III

Ind. Soc., Vol. I, Ch. 2 (G-H), Ch. 3; Vol. II, Ch. 3 (C, D)

GORE *et al.*, *Property* (1913)

CANNAN, *Wealth*, Ch. 5

TUFTS, *The Real Business of Living*, Ch. 15, 19-24

HADLEY, *The Conflict between Liberty and Equality* (1925) *

MILL, J. S., *Principles of Political Economy* (1848), Bk. II, Ch. 1, 2; Bk. V, Ch. 11

ROBERTSON, *The Control of Industry* (1923),* Ch. 1

KEYNES, *The End of Laissez Faire* (1926)

BENN, *The Return to Laissez Faire* (1929)

HOBSON, *Free Thought in the Social Sciences* (1926)

OSBURN, *Social Change* (1922) *

ELY, *Property and Contract* (1914), Vol. I

LOWIE, *Primitive Society* (1920), pp. 205-256

HOBHOUSE, *Morals in Evolution* (1915), pp. 318-353

SOMBART, *Quintessence of Capitalism* (1915)

WESTERMARCK, *Origin and Development of the Moral Ideas* (1906), Vol. II, pp. 1-71

VEBLEN, *Theory of the Leisure Class* (1912)

WEBER, *The Protestant Ethic and the Spirit of Capitalism* (1930) *

TAWNEY, *Religion and the Rise of Capitalism* (1926), esp. Ch. 4, 5

STAMP, *The Christian Ethic as an Economic Factor* (1926)

CHAPTER IV

§ 1. A recent report of the National Industrial Conference Board (*New York Times*, Jan. 23, 1932) puts the national wealth of the United States in 1930 at 329.7 billion dollars. This is a decrease of 8.9 per cent from 1929, but an increase in current values of 71 per cent over 1914. In 1913 dollars the increase is 35 per cent.

Every family in the United States would have \$10,961 of capital and an annual income of \$2366 if the national wealth and income for 1930 could be divided equally among all the families of the country. The term "national wealth," as applied in these estimates, represents tangible, physical assets only, not their ownership. It excludes credits and securities, but specifically includes land and structures and other improvements thereon, the equipment of industrial enterprises and farms, live stock, railroads and other public utilities, personal property, motor and other vehicles, and gold and silver coin and bullion. The national income is the aggregate value of all commodities produced

and services rendered to which a price is commonly attached, and is equivalent to the sum of personal income received by all individuals in the country, plus business savings.

§ 7. The quotation is from STAMP, *Wealth and Taxable Capacity* (1922), Ch. 2

Ind. Soc., Vol. II, Ch. I, 7 (C)

DURAND, *American Industry and Commerce* (1930), Ch. I, 2

TUGWELL *et al.*, *American Economic Life*, Ch. 5-8

MAZUR, *American Prosperity: Its Causes and Consequences* (1928)

SIEGFRIED, *America Comes of Age* (1927)

KING, *The National Income and Its Purchasing Power* (1930)

HOOVER COMMITTEE, *Recent Economic Changes* (1929) —
2 vols., *passim*

CHAPTER V

BOGART AND LANDON, *Modern Industry* (1927), Ch. 15, 18

DURAND, *American Industry and Commerce*, Ch. 9

HAMILTON AND WRIGHT, *The Case of Bituminous Coal* (1925) *

LUBIN AND EVERETT, *The British Coal Dilemma* (1927)

MARCOSSON, *The Black Golconda* (1924)

ISE, *The United States Oil Policy* (1926), Ch. 12-19

LAIDLER, *Concentration in American Industry* (1931),
Ch. 2, 4

DEVINE, *Coal* (1925), Pt. I, Ch. 5-10; II, 12; III, 22, 26

GOODRICH, *The Miner's Freedom* (1925)

LUBIN, *Miners' Wages and the Cost of Coal* (1924)

NEARING, *Anthracite* (1915)

JONES, *The Anthracite Coal Combination* (1914)

RAUSHENBUSH, *The Anthracite Question* (1924)

- REDMAYNE, *The British Coal-Mining Industry during the War* (1923)
CHASE, *The Miners Present a Plan* (*New Republic*, June 20, 1923)
DAVENPORT AND COOKE, *The Oil Trusts and Anglo-American Relations* (1924)
STOCKING, *The Oil Industry and the Competitive System* (1925)
MOHR, *The Oil War* (1926)
DELAISI, *Oil* (1922)
LOGAN, *Stabilization of the Petroleum Industry* (1931)
JONES, *The Trust Problem* (1921), Ch. 5
SEAGER AND GULICK, *Trust and Corporation Problems* (1929), Ch. 8, 9

CHAPTER VI

- DURAND, *American Industry and Commerce*, Ch. 4, 8
BOGART AND LANDON, *Modern Industry*, Ch. 21-23
CANNAN, *Wealth*, Ch. 4
WRIGHT, *Population* (1923) *
COX, *The Problem of Population* (1923)
ACADEMY OF POLITICAL SCIENCE: *Proceedings*, July 1926.
(Raw materials in relation to international policy)
FAIRCHILD AND COMPTON, *Economic Problems* (1930), Ch. 1, 2
ROSS, *Standing Room Only?* (1927)
CAPPER, *The Farm Bloc* (1925)
SELIGMAN, *The Economics of Farm Relief* (1929)
-
- CARR-SAUNDERS, *The Population Problem* (1925)
EAST, *Mankind at the Cross-roads* (1923), Ch. 1-6, 12
KUCZYNSKI, *The Balance of Births and Deaths* (1928) *
DUBLIN, *Population Problems in the United States and Canada* (1926)

- REUTER, *Population Problems* (1923)
- BLACK, *Agricultural Reform in the United States* (1929) *
- LAIDLER, "Dilemma of American Agriculture" (*League for Industrial Democracy Monthly*, Nov. 1931); "A Program for the Farm" (*Ibid.*, Dec. 1931)
- ENFIELD, "The World Wheat Situation" * (*Economic Journal*, Vol. XLI, p. 164)
- LEAGUE OF NATIONS ECONOMIC COMMITTEE, *The Agricultural Crisis* (1931)
- FEDERAL FARM BOARD OF UNITED STATES, *Bulletins and Annual Reports*
- FOOD RESEARCH INSTITUTE, STANFORD UNIVERSITY, CALIFORNIA, . *Wheat Studies* (Valuable data and periodic surveys in pamphlet form)
- Monthly Labor Review*, October 1931: "Mechanization of Agriculture as a Factor in Labor Displacement"

CHAPTER VII

- Ind. Soc.*, Vol. II, Ch. 3 (G), 4, 7 (A)
- BOGART AND LANDON, *Modern Industry*, Ch. 25-28
- DURAND, *American Industry and Commerce*, Ch. 10
- WALKER, *Steel: the Diary of a Furnace Worker* (1922)
- ROBERTSON, *The Control of Industry* (1923),* Ch. 1-6
- CHASE, *Men and Machines* (1929) *; *The Tragedy of Waste* (1926)

-
- RIPLEY, *Main Street and Wall Street* (1927)
- CARVER, *The Present Economic Revolution* (1925)
- CHASE, *The Nemesis of American Business* (1931)
- DONHAM, *Business Adrift* (1931)
- MEAKIN, *The New Industrial Revolution* (1928). (Rationalization)

Examples of Increasing Returns and Productivity: "Efficiency of American Labor" (*Monthly Labor Review*, July 1922); "Efficiency and Wages in the United States," *Ibid.*, May 1925; "Methods That Have Revolutionized the Automobile Industry," *Ibid.*, Nov. 1923; "Workers, Machinery and Production in the Automobile Industry," *Ibid.*, Oct. 1924; "Labor Productivity" (general figures), *Ibid.*, Oct. 1926; "Labor Productivity" (slaughtering), *Ibid.*, March 1924; "Labor Productivity" (meat packing, petroleum refining), *Ibid.*, Nov. 1926; "Labor Productivity" (sawmills), *Ibid.*, Jan. 1923; "Labor Productivity" (coal), *Ibid.*, Sept. 1922; "Trend of Occupations," *Ibid.*, May 1925; "Trend of Employment" (proportion of women), *Ibid.*, April 1925; "Wastage of Men," *Ibid.*, July 1924; "Unemployment as a Result of Overdevelopment," *Ibid.*, Oct. 1925

UNITED STATES SENATE, HEARINGS ON S. RES. 219 (1929):
 "Unemployment in the United States," pp. 491-517

CHAPTER VIII

Every student should read the story of at least one of the great combinations as given in:—

JONES, *The Trust Problem*

JENKS AND CLARK, *The Trust Problem* (1929)

SEAGER AND GULICK, *Trust and Corporation Problems*

LAIDLER, *Concentration in American Industry* (or the original reports therein cited)

Ind. Soc., Vol II, Ch. 7 (B), is a good survey of methods used for concentrating control, and the main lines of counteraction. The texts of the laws are available in the volume on *Anti-Trust Legislation* issued by the Government Printing

Office, and in Appendix F of Jenks and Clark (5th edn.) The following are among the more useful works in a very large field for students who plan more intensive study:—

FETTER, *The Masquerade of Monopoly* (1931)

WATKINS, *Industrial Combinations and Public Policy* (1927)

HENDERSON, *The Federal Trade Commission* (1925)

NATIONAL INDUSTRIAL CONFERENCE BOARD, *Trade Associations* (1925); *Mergers and the Law* (1929); *Public Regulation of Competitive Practices* (1925)

THORP, *The Integration of Industrial Operation* (1924)
(Census monograph)

MARQUAND, *The Dynamics of Industrial Combination* (1931)

CLARK, J. D., *The Federal Trust Policy* (1931)

BASSETT, *Operating Aspects of Industrial Mergers* (1931)

MURPHY, *Merchandising through Mergers* (1931)

JONES, F. D., "Historical Development of the Law of Business Competition" * (*Yale Law Journal*, Vol. XXXV, XXXVI, 1925, 1926)

STETSON *et al.*, *Some Legal Phases of Corporate Financing* (1917). (See esp. Wickersham on the Sherman Act)

FEDERAL TRADE COMMISSION, Annual Reports

KEEZER AND MAY, *The Public Control of Business* (1930) *

CLARK, J. M., *The Social Control of Business* (1926)

GORDON, *The Problem of Trust and Monopoly Control* (1928). (Modern Germany)

LIEFMANN, *International Cartels* (1927)

MEANS, "The Large Corporation in American Life" * (*American Economic Review*, Vol. XXI, No. 1, 1931)

SHARFMAN, "The Trade Association Movement" (*American Economic Review*, Vol. XVI; Supp., March 1926)

HENDERSON, "Statistical Activities of Trade Associations,"
Ibid.

CHAPTER IX

Important modifications in the Transportation Act are probable in the near future, especially in regard to valuation as a basis of rate making. The current discussion is of considerable significance for economic theory. (Reports of Interstate Commerce Commission, files of *Railway Age* and *United States Daily*)

§ 9. The citation is from the hearings on the Chicago, Burlington and Quincy Railroad, Valuation Docket No. 715, 1927.

MOODY, *The Railroad Builders* (1921)

RIPLEY, *Railroads: Rates and Regulation* (1912), Ch. 2

RUFENER, *Principles of Economics* (1927), Ch. 18

DIXON, "The Transportation Act" (*American Economic Review*, Supp. March 1921)

FAIRCHILD, FURNISS AND BUCK, *Elementary Economics* (1930), Vol. II, Ch. 27, 28

DAGGETT, *Principles of Inland Transportation* (1928)

JONES, E., *Principles of Railway Transportation* (1924)

LOCKLIN, D. P., *Railroad Regulation since 1920* (1928)

WOLF, *The Railroad Labor Board* (1927)

ELLINGWOOD AND COOMBS, *The Government and Railroad Transportation* — source book (1930)

HINES, BLAIR, WATERMAN *et al.* on Railway Consolidation, in *Proceedings of Academy of Political Science*, June 1929

HENDERSON, "Railway Valuation and the Courts" * (*Harvard Law Review*, Vol. XXXIII, 1920)

ORTON, "Valuation Theory on American Railroads" (*Economic Journal*, Vol. XXXIX, No. 154, 1929)

CHAPTER X

The references do not aim, of course, to give more than a sampling of reformist literature; their main use at this point is to suggest problems.

- § 2. RUSSELL, *Proposed Roads to Freedom* (1919); *Prospects of Industrial Civilization* (1923)
 ORTON, "The Social Philosophy of Mr. Bertrand Russell" (*American Economic Review*, Vol. XIV, No. 2, 1924)
- § 3. FOSTER AND CATCHINGS, *The Road to Plenty* (1928), Ch. 15; *Business without a Buyer* (1927), Ch. 5.
 (Comment on installment selling)
 SELIGMAN, *The Economics of Installment Selling* (1927), Vol. I (*passim*)
- § 4. RIPLEY, *Main Street and Wall Street*, Ch. 2-4
 LOUGH, *Business Finance* (1919), pp. 459-463
New Republic, April 22, 1925: "Higher Tariffs for Textiles?"
- § 5. SEAGER AND GULICK, *op. cit.*, Ch. 25
 GORDON, *op. cit.*, App. A
 JENKS AND CLARK, *op. cit.*, App. G 5
- § 6. COLE, *Guild Socialism* (1920)
 BEER, *History of British Socialism* (1920), Vol. II, Ch. 18
 BELLOC, "On Usury," in *Essays of a Catholic* (1931)
 DEVAS, *Political Economy* (1907), Bk. II, Ch. 11

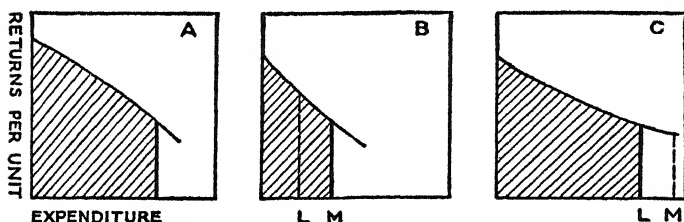
CHAPTER XI

§ 3. The diagram is from

WORKING, "Statistical Determination of Demand Curves" (*Quarterly Journal of Economics*, Vol. XXXIX, p. 511, 1925). A valuable study with bibliography. See also

SCHULTZ, *Statistical Laws of Demand and Supply* (1928).
(Advanced mathematical exposition)

§ 6. The Rule of Balance. This may be illustrated graphically by plotting amounts of expenditure along ox and utility per unit of expenditure along oy . Assuming the principle of diminishing marginal utility, the curves will fall from left to right. Take three commodities, A, B, C; it is required to show that total utility (represented by shaded areas) is greatest when marginal utilities per unit of expenditure (vertical measurements at right-hand margin) are equal. This must obviously be true so long as the curves slope from left to right; for if a given amount of expenditure (say $L M$) is removed from B and added to C, the area lost must necessarily be greater than the area gained.



Cf. CHAPMAN, *Outlines of Political Economy* (1917), Ch. 4, 5, 14-18. (The most accurate of all elementary expositions)

CHAPTERS XI, XII

Ind. Soc., Vol. II, Ch. 6 (A, B); Vol. III, Ch. 2 (A, 1-5), 3 (C)
TUGWELL *et al.*, *American Economic Life*, Ch. 31-34
CHASE AND SCHLINK, *Your Money's Worth* (1927) *
HENDERSON, *Supply and Demand* (1922) *

MITCHELL, "The Backward Art of Spending Money"
(*American Economic Review*, Vol. II, No. 2, 1912)

WAITE, *Economics of Consumption* (1928)

Inasmuch as value theory has long been the central point of Anglo-Saxon economics, the advanced student will find almost as many expositions as there are authors, and no general list can be given. A complete guide to modern economic theory will be found in:—

SURANYI-UNGER, *Economics in the Twentieth Century* (1931), which includes critical as well as expository statements in its exhaustive survey.

SPANN (*op. cit.*, Ch. 2), giving a partial but stimulating review with a very decided bias

HOMAN, *Contemporary Economic Thought* (1929), giving an excellent study of leading modern Anglo-Saxon economists

Membership in Consumers' Research, Inc. (24 West 25th Street, New York), will bring the student a current scientific appraisal of consumers' goods and marketing devices, continuing along the lines of Chase and Schlink (*op. cit.*)

CHAPTER XII

§ 5. This diagram, and the schedule of fir lumber shown in Chapter XIII, are from TAUSSIG, "Price-Fixing as Seen by a Price-Fixer" (*Quarterly Journal of Economics*, Vol. XXXIII, 1919). The following references are also valuable in this connection:—

TAUSSIG, "Is Market Price Determinate?" (*Ibid.*, Vol. XXXV, 1921); "A Contribution to the Study of Cost-Curves" (*Ibid.*, Vol. XXXVIII, 1923)

SIMPSON, "Price-Fixing and the Theory of Profit" (*Ibid.*, Vol. XXXIV, 1919); "A Statistical Analysis of the Rela-

tion between Cost and Prices" (*Ibid.*, Vol. XXXV, 1921); "Further Evidence on the Relation between Price, Cost and Profit" (*Ibid.*, Vol. XXXVII, 1923)

WRIGHT, "Cost of Production and Price" (*Ibid.*, Vol. XXXIII, 1919)

NOURSE, "Normal Price as a Market Concept" (*Ibid.*, Vol. XXXIII, 1919)

CHAPTER XIII

§ 5. Wheat: See Enfield (*loc. cit.*, Ch. VI— from which the quotation is made) and *Monthly Labor Review* cited under Ch. VI. Newsprint: Report of Federal Trade Commission, 1917. Radio: Current sources, 1931-32. The Trade Association references under Ch. VIII are relevant here.

Ind. Soc., Vol. II, Ch. 3 (E, F); Vol. III, Ch. 3 (B)

ATKINS *et al.*, *Economic Behavior* (1931), Vol. I, Ch. 15-26.

See also under Ch. XIV

CHAPTER XIV

§ 5. See references to Ch. XII; also

SECRIST, *Competition in Retail Distribution of Clothing* (Northwestern University, 1923); *Expense Levels in Retailing* (1924)

WOLFE, "Competitive Costs" (*Quarterly Journal of Economics*, Vol. XXXIX, 1924)

BLACK, *Production Economics* (1926), Ch. 28

Individual reports of United States Tariff Commission

The quotation is from:—

WILLIS, "A Tariff Policy for the Future" (*Annals of American Academy of Political and Social Science*, Vol. 156, July 1931)

Ind. Soc., Vol. III, Ch. 2 (A, 7, 8)

WELD AND TOSTLEBE, *A Case-book for Economics* (1927),*
Cases 50-64

CHAPTER XV

Ind. Soc., Vol. III, Ch. 2 (A, 6)

GEMMILL, *Fundamentals of Economics* (1930), Ch. 23

GEORGE, *Progress and Poverty* (1879), Bk. VI-VIII

SCHEFTEL, *Taxation of Land Values* (1916)

SELIGMAN, *Essays in Taxation* (1923), Ch. 3

ELY AND MOREHOUSE, *Elements of Land Economics* (1924)

ELY, *Outlines of Economics* (1930 edn.), Ch. 22. (Contrary
view to that given in text)

CHAPTER XVI

The gap between theoretical economics and business practice is particularly evident at this point. Economists have been especially lax in neglecting to keep in touch with accountancy, and the student may learn a good deal from elementary books of accounting or, better still, from any practising accountant who will explain the reasons for what he does.

Ind. Soc., Vol. III, Ch. 6 (C)

GEMMILL, *Fundamentals*, Ch. 26

ATKINS *et al.*, *Economic Behavior*, Vol. I, Ch. 10, 11

FRIDAY, *Profits, Wages and Prices* (1920)

YOUNG, "Profits in American Industry" (*American Bankers Association Journal*, Vol. XXXIV, Sept. 1931)

KNIGHT, *Risk, Uncertainty and Profit* (1921)

- VEBLEN, *Theory of Business Enterprise* (1904); *Absentee Ownership* (1923)
 FOSTER AND CATCHINGS, *Profits* (1925)

CHAPTER XVII

- Ind. Soc.*, Vol. III, Ch. 4 (C)
 FISHER, *The Nature of Capital and Income* (1912), Ch. 12
 ATKINS *et al.*, *Economic Behavior*,* Vol. I, Ch. 12-14 (also
 for following chapter)
 WELD AND TOSTLEBE, *Case-book*, 89-92
 CANNAN, *Wealth*, Ch. 7

-
- FISHER, *The Theory of Interest* (1930)
 CASSEL, *The Nature and Necessity of Interest* (1903);
Theory of Social Economy (1932), Vol. II, Ch. 10, 11

CHAPTER XVIII

§ 1. The approach to the money question through banking is really a study of the demand for currency prior to the supply of currency; it is perhaps the most useful method for the beginner in view of the increasing importance of commercial paper. Discussion of the quantity theory is omitted on the ground of the extended treatment necessary to redeem the theory from the charge of truism.

- Ind. Soc.*, Vol. III, Ch. 4 (A, B), 2 (B, C)
 ROBERTSON, *Money* (1922) *
 KEMMERER, *A B C of the Federal Reserve System* (1932)
 FISHER, *Stabilizing the Dollar* (1920)
 EDIE, *The Banks and Prosperity* (1931) *
 SPAHR, *The Federal Reserve System and the Control of Credit*
 (1931)